

# Attitudes and Objects

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## Abstract

Past thinkers have distinguished between attitudes we have directly about objects (*de re* attitudes) and attitudes that are fully conceptual (*de dicto* attitudes). Yet they fail to indicate how sentences we use to state attitudes (e.g., ‘*a* believes such and such’) relate to attitudes of one type or the other.

I look at statements about propositional and attributive attitudes to discover when we state propositional, or *de dicto*, attitudes and when we state relational attributive, or *de re*, attitudes. Which type of attitude a speaker states depends on how he uses the singular terms appearing in his sentence. As Keith Donnellan has argued, we can use a singular term either referentially to pick out a particular object or attributively to pick out whatever the term fits. I hold that when the speaker uses a singular term referentially, he states a *de re*, attributive attitude. And when the speaker uses all his singular terms attributively, he states a *de dicto*, propositional attitude. (We are not concerned with the singular term that specifies the subject, of course.)

After discovering when we state attitudes of either type, I apply this knowledge to interpreting sentences used to state attitudes. Interpreting sentences about attitudes involves explicitly formulating what the sentence says. To make attitude sentences explicit I use Bertrand Russell’s theories of proper names and of definite descriptions. How the speaker uses the singular terms in his statement dictates which of Russell’s theories we apply and how we apply it.

Russell developed his theories of proper names and of descriptions with a particular semantics in mind. He thought that sentences denote propositions and predicates denote propositional functions. Note that I write ‘denote’ and not ‘express’. Only in the context of this semantics do Russell’s theories resolve quandaries about the logic of terms in sentences about attitudes. I present Russell’s semantics and show how it resolves the opacity of such terms.

Resolving these logical problems provides insight into what propositional and attributive attitudes are about. An attitude is about whatever the terms in the attitude content of a sentence expressing the attitude transparently denote.

## Chapter 1

# Traditional Views

### 1 Introduction

Here I shall give a brief overview of what I do in this work. Past thinkers have distinguished between attitudes we have directly about objects (*de re* attitudes) and attitudes that are fully conceptual (*de dicto* attitudes). Yet they fail to indicate how sentences we use to state attitudes (e.g., ‘*a* believes such and such’) relate to attitudes of one type or the other.

I look at statements about propositional and attributive attitudes to discover when we state propositional, or *de dicto*, attitudes and when we state relational attributive, or *de re*, attitudes. Which type of attitude a speaker states depends on how he uses the singular terms appearing in his sentence. As Keith Donnellan has argued, we can use a singular term either referentially to pick out a particular object or attributively to pick out whatever the term fits. I hold that when the speaker uses a singular term referentially, he states a *de re*, attributive attitude. And when the speaker uses all his singular terms attributively, he states a *de dicto*, propositional attitude. (We are not concerned with the singular term that specifies the subject, of course.)

After discovering when we state attitudes of either type, I shall apply this knowledge to interpreting sentences used to state attitudes. Interpreting sentences about attitudes involves explicitly formulating what the sentence says. To formulate what a sentence about an attitude says I shall use Bertrand Russell’s theories of proper names and of definite descriptions. How the speaker uses the singular terms in his statement dictates which of Russell’s theories we apply and how we apply it.

Russell developed his theories of proper names and of descriptions with a particular semantics in mind. He thought that sentences denote propositions and predicates denote propositional functions. Note that I write ‘denote’ and not ‘express’. Only in the context of this semantics do Russell’s theories resolve quandaries about the logic of terms in sentences about attitudes. I shall present Russell’s semantics and show how it resolves the opacity of such terms.

Resolving these logical problems provides insight into what propositional and attributive attitudes are about. An attitude is about whatever the terms in the attitude content of a sentence expressing the attitude transparently denote.

## 2 Propositional Attitudes

In this section I shall define the term ‘propositional attitude’ and discuss two areas of philosophical interest affected by a theory of propositional attitudes: logic and the philosophy of mind. By showing the connections of these two areas to a theory of propositional attitudes, I hope to show the source of my own interest in statements about propositional attitudes and to motivate a critical examination of such statements.

Bertrand Russell introduced the term ‘propositional attitude’ in *An Inquiry into Meaning and Truth* (1962). A propositional attitude is a psychological attitude that a person has toward a proposition. Russell’s prime examples of propositional attitudes were believing, desiring, and doubting. In a sentence expressing a propositional attitude, a subordinate sentence expresses the proposition (see Russell 1962, 62). ‘Ron doubts that he can graduate cum laude’, for instance, states a propositional attitude.

Russell focused on central examples of propositional attitudes and assumed that his discussion of belief could be generalized to other propositional attitudes. However, different propositional attitudes show marked differences in logic. So I think it wise to delineate the concept of propositional attitude more fully and also to give instances of sentences that do not express propositional attitudes yet share some of the logical peculiarities of sentences that do.

Let us turn first to the more concrete of Russell’s criteria for propositional attitudes: a sentence expressing a propositional attitude has a subordinate sentence that expresses the proposition. One is led to expect an expression that forms a complete sentence when lifted out of the containing sentence. This is indeed the case for sentences with ‘that’ clauses: ‘Sue thinks that Yogi Berra is a cartoon character’.

But consider the sentence ‘Mary believes John to be the handsomest man on earth’. Many English speakers would say that it expresses the same thing as ‘Mary believes that John is the handsomest man on earth’. If we agree, we commit ourselves to the position that with some attitude verbs we can express a subordinate proposition with an accusative and an infinitive. Quine thinks that the two sentences say something different, but he legislates here rather than interprets (see 1960, 149–50). I shall present Quine’s understanding of such sentences in section 4, “Quine on Attitudes.”

‘Pat expected that he would win’ expresses a propositional attitude. Doesn’t this sentence express the same propositional attitude as ‘Pat expected to win’? If it does, it would seem that if

the subject of the subordinate proposition is the same as that of the main sentence, we can omit the subject term and express the subordinate proposition with just an infinitive alone.

We express a propositional attitude with ‘Tom was angry that Sally refused to go out with him’. Don’t we say the same thing with a possessive and gerund: ‘Tom was angry at Sally’s refusing to go out with him’, or with a noun phrase: ‘Tom was angry at Sally’s refusal to go out with him’? (For more on subordinate propositions, see Onions 1971, 48–52.)

My purpose here is to suggest how extensive our propositional-attitude idiom is. I do not want to assert that all of the above alternative ways of expressing propositional attitudes are synonymous with their ‘that’ clause counterparts. We may be able to give other sound interpretations of the above alternative ways of expressing propositional attitudes without violating the English language. We could, for instance, take ‘Mary believes John to be the handsomest man on earth’ to express a *de re* belief and ‘Mary believes that John is the handsomest man on earth’ to express a *de dicto* belief. What these examples of propositional attitudes have in common is that we can adequately describe the propositional attitude by expressing the content of the propositional attitude with a complete sentence.

This is not to say that all attitudes are propositional. ‘Sam is afraid of the dark’ and ‘May wants some ice cream’, for example, express nonpropositional attitudes. Quine labeled such attitudes ‘attributive attitudes’ (see 1969a, 21). I shall discuss attributive attitudes more after discussing Russell’s other mark of a propositional attitude.

The other distinguishing mark of a propositional attitude that Russell noted is its psychological nature (see 1962, 62). A complex sentence built up only of truth functions and atomic sentences has its truth value determined only by the truth values of the atomic sentences. In contrast, whether a subordinate sentence is true or false often makes no difference to the truth value of a sentence expressing a propositional attitude. (Statements of factive and counterfactual propositional attitudes are exceptions, which I shall discuss later in this section.)

‘Tony fears that Mary won’t come to the dance’, for instance, may be true or false independently of whether ‘Mary won’t come to the dance’ is true or false. Fears are independent of truth values. Suppose the following scenario: Tony fears that Mary won’t come to the dance, and Tony will have someone to dance with if and only if Mary comes to the dance. It does not follow that Tony fears that he will have no one to dance with. For he may think that he has more of a way with women than he really does. If Tony does fear that he will have no one to dance with, his two fears are distinct even though the things he fears are truth functionally equivalent. Clearly, fears are more finely delineated than truth values.

What sort of entity is as finely delineated as are fears and the psychological states of other propositional attitudes? One answer often proposed is that propositions are. Along this line, statements of propositional attitudes are said to assert various relations, or attitudes, toward propositions. To take the term literally, a propositional attitude is an attitude toward a proposition.

The holder of the propositional attitude need not have the proposition in mind at all times. We do not suspend our beliefs when we go to sleep or occupy ourselves with unrelated tasks. If we did, there would be no consistency to our beliefs. Karen would believe  $p$  when she had  $p$  in mind and would not believe  $p$  when she focused her attention elsewhere. (Note that I do not say 'Karen would believe  $\sim p$ '.) Some propositional attitudes are more dispositional than mental.

Other propositional attitudes, however, have more of a mental character. Conjecturing that  $p$ , for instance, involves envisioning the possibility that  $p$ . If  $p$  is no longer before a person's mind, he is not conjecturing that  $p$ . It is difficult to construe conjecturing as a disposition to act in certain ways, since conjecturing does not manifest itself in overt behavior.

A propositional attitude may be conceptualized linguistically, but it need not be. Suppose Henry's dog Arf buries a bone in the garden, and Henry removes it. The next day Arf digs for his bone. To describe Arf's psychological state, we might quite correctly say 'Arf believes that his bone is buried in the garden'. What the example shows is that it is possible to have a propositional attitude without conceptualizing the proposition linguistically. Humans, too, often have propositional attitudes nonlinguistically conceived. Witnesses to crimes, for instance, usually conceive their beliefs at least partly in images. The police resort to police drawings and line-ups because they frequently have to discover propositions equivalent to beliefs like the belief that so-and-so robbed the bank, where so-and-so is a person represented by an image. Propositional attitudes need not involve dispositions toward sentences.

A propositional attitude is a person's psychological inclination or disposition toward a proposition. What the disposition is depends on the attitude involved. Believing is a disposition to assent to a proposition and to act in ways consistent with it. Wishing is a disposition to make a proposition true should the opportunity arise. The types of dispositions involved are as varied as the attitude verbs in our language.

This psychological aspect of propositional attitudes is important because of how it affects statements of propositional attitudes. To show the effect I must first discuss a group of sentences (opaque sentences) that includes sentences expressing propositional attitudes.

It will also be helpful if I clarify here what I mean by ‘definite singular term’. Definite singular terms include names like ‘Socrates’, proper nouns like ‘the Statue of Liberty’, definite descriptions like ‘the professor of medieval philosophy’, singular demonstratives like ‘that’, and singular pronouns like ‘she’. For brevity I shall often talk of singular terms rather than definite singular terms. Even when I do, I do not intend to include indefinite singular terms, like ‘a book’. I shall always be specific when talking about indefinite singular terms.

Any sentence expressing a propositional attitude is opaque for some expression. An opaque sentence is one in which there is a failure of extensionality (see Quine 1960, 151). In an opaque sentence something besides the denotations of component singular terms, the denotations of component predicate terms, and the truth values of component sentences plays a role in determining the truth value of the sentence. A sentence can fail to be extensional in one of three ways. Its truth value is not a function of just the objects that component singular terms denote, the extensions of component predicate terms, and the truth values of component sentences (see Russell 1962, 160).

If the sentence contains no indicator words, the truth value of the sentence is, of course, the truth value of the statement expressed by the sentence. Since extensionality is defined in terms of the denotations of *expressions*, sentences, not statements, are extensional for particular terms. If a sentence contains an indicator word and expresses a proposition only in context, we can consider the context and expand the sentence into a sentence that is true or false independent of context and say that this context-independent sentence is extensional or not for particular terms, but this will come later in section 8, “Referential versus Attributive Use.”

From the three ways in which a sentence can fail to be extensional arise three ways to test for extensionality. Does a sentence have the same truth value when we substitute a codesignating singular term, a coextensive predicate, or a subordinate sentence with the same truth value? If the answer is ‘no’ for such a substitution, the sentence is opaque for the term in question.

For example, ‘Tom assumed that the evening star is Venus’ is opaque for ‘the evening star’, since its truth value may change if we substitute ‘the morning star’ for this term, even though the morning star is the evening star.

Similarly, ‘Because higher organisms have kidneys, they can efficiently eliminate wastes’ is opaque for ‘to have kidneys’, since substituting ‘to have hearts’ for the term changes the truth value. Yet all and only organisms with kidneys have hearts.



Finally, even though Fred is late for a particular bridge party if and only if Fred is listening to Mozart then, from 'It seems that Fred is late for bridge' it does not follow that it seems that Fred is listening to Mozart. The sentence is opaque for 'Fred is late for bridge'.

Opaque sentences are opaque at given terms for different reasons. 'Vesper is necessarily the evening star', for instance, is opaque for the terms 'Vesper' and 'the evening star' because it is the manner of specifying an object that makes a sentence about that object necessary. Such, at least, is Quine's view (1976, 158–59, 176). Many a modal logician holds that alethic modal sentences are necessary because singular terms in these contexts denote not things in this world but possible entities in possible worlds.

'Steve whispered that he [Steve] thinks Alice is pretty' is opaque for 'he thinks Alice is pretty' because the speaker is indirectly quoting Steve and so must use the words that Steve used or at least give the gist of those words. We do, however, allow the speaker to adjust pronouns and to fill in memory lapses as best he can.

In the next several paragraphs I want to look systematically at a number of constructions that give rise to opaque sentences and discuss why these constructions create sentences opaque for component terms. It is important, I think, to see early on the welter of constructions that give rise to opacity and to note the place of expressions used to describe propositional attitudes among these other constructions. The discussion will lack certain refinements that come later. In particular, I cannot assume that a sentence opaque for a given term is opaque for other terms. Hence, also, I cannot assume that a sentence opaque by one criterion is opaque by the other criteria as well. When I speak of opaque sentences below, I mean a sentence opaque for a term by any of the criteria given above.

First, there are numerous impersonal opaque sentences. An example is 'It is obvious that the evening star appears in the evening'. The sentence becomes false if we substitute 'the morning star' for 'the evening star'. Constructions that produce impersonal opaque sentences are: 'It seems (appears) that'; 'It is clear (manifest, certain, doubtful, necessary, possible, fortunate, a pity, good, bad, appropriate, right, wrong, obvious, expected, surprising, strange, odd) that'. Many of the adjectives in this list give rise to adverbs that can modify an entire sentence. Such sentential adverbs also produce opaque sentences. For example, 'Obviously, the evening star appears in the evening' is opaque for 'the evening star appears in the evening'.

These expressions give rise to opaque sentences for quite different reasons. What makes something obvious may be the way it is said, as in the example above, but it may also be the facts of the case, as when Sherlock Holmes says, 'It is obvious that the murderer is left-handed'.

When it is the way something is said that makes a sentence opaque, we can maintain that we are really talking about the language, rather than objects in the real world. But clearly, such a semantics will not do for all of the above expressions, or even all uses of ‘it is obvious that’. What makes something factually obvious is how that fact accords with other facts. When a sentence is about how one fact accords with others, we cannot substitute in the sentence a subordinate sentence equivalent only in truth value.

‘It is necessary that’ and ‘it is possible that’ (or their adverb equivalents) have modal uses like ‘Nine is necessarily greater than five’. We can hold that this sentence is opaque because it really says something about ‘nine is greater than five’ (see Quine 1976, 158–59, 176). But not all sentences in which ‘it is necessary that’ figures express modal statements. For instance, ‘It is necessary that we get provisions today, because we won’t have time tomorrow’ makes a statement about contemplated states of affairs. Since we are concerned here with what might be called ‘propositions’, substituting a sentence equivalent only in truth value is not legitimate.

Whether a fact is strange, odd, or surprising depends on customs, habits, and expectations, and how the fact accords with those customs, habits, or expectations. What makes a fact right or wrong are our notions of obligation and justice and how the fact conforms to or violates those notions.

Sentences stating reasons are also opaque for subordinate sentences. For example, ‘The Senate declared war because Caesar crossed the Rubicon’ and ‘Caesar crossed the Rubicon if and only if Hannibal crossed the Alps’ are both true, yet stating ‘The Senate declared war because Hannibal crossed the Alps’ would be false.

Let us turn now to sentences about attitudes. There are two types of attitudes: propositional attitudes and what Quine called ‘attributive attitudes’ (1969a, 21). Attributive attitudes are attitudes toward attributes. It is obviously possible to hunt unicorns even though there are none. So hunting cannot be a relation to objects. Hunting unicorns is different from hunting griffins. So hunting cannot be a relation to sets. We can keep attributive attitudes involving coextensive sets distinct by viewing an attributive attitude to be a relation to a kind of object rather than a relation to objects of certain kind. An object is of a certain kind just in case it has the attribute indicated by that kind. Attributive attitudes are thus dispositions toward attributes, whereas propositional attitudes are dispositions toward propositions. Attributive attitudes are like propositional attitudes in that they are dispositions people have toward intensions (or meanings).

Verbs used to express attributive attitudes are ‘to hunt (search for, want, fear, lack) something’. Sentences about attributive attitudes are opaque for general terms. ‘Don Quixote is

hunting dragons', for example, is not equivalent to 'Don Quixote is hunting unicorns', even though vacuously, all and only dragons are unicorns. Hence, the sentence is opaque for the general term 'dragon'.

Let us turn now to sentences expressing propositional attitudes. Sentences about propositional attitudes are opaque, though as we saw above, not all opaque sentences express propositional attitudes. The superficial reason that sentences about propositional attitudes are opaque is that propositional attitudes are about propositions. Hence, the proposition expressed by the subordinate sentence, rather than its truth value, contributes to determining the truth value of the containing sentence. On a more practical level, the reason that sentences expressing propositional attitudes are opaque is that we often construe such sentences as giving the way in which the subject of the sentence conceives things.

Since I shall discuss the logic of sentences expressing propositional and attributive attitudes later in this essay, I wish to indicate here only the diversity of such sentences. (In formulating and organizing this list of attitude constructions I found help in Austin 1975, lecture 12.)

In a typical sentence expressing a propositional attitude the subject is a person and there is a subordinate sentence giving the proposition about which the subject has a particular attitude. In a typical sentence about an attributive attitude the subject is again a person and an infinitive phrase or a gerund phrase specifies the attribute about which the subject has a particular attitude. Since the particles that we use with a particular verb often indicate whether we are using the verb to express a propositional or attributive attitude, I shall indicate accompanying particles in this list of attitude verbs.

Sometimes in a sentence about a propositional attitude the subject is not a person. We say things like 'The computer knows that Larry is a graduate student', meaning that that fact is appropriately represented in the database of a particular program on the computer. But such statements are parasitic on more normal cases. Let us try to understand the logic of typical sentences about propositional attitudes before treating atypical ones.

The most thoroughly studied sentences about propositional attitudes are epistemic sentences, sentences expressing people's knowledge and beliefs. Among the expressions we use to state people's knowledge and beliefs are: 'to believe (think, be sure, be certain, be confident, doubt, trust, know, realize, be aware, perceive, see, remember, recall, recollect, forget, understand, take it, anticipate, expect, foresee) that'. When some of these expressions figure in a sentence, the sentence implies that the subordinate sentence is true. This is true of

'know', 'realize', 'be aware', 'see' (in the sense of 'Gary saw that Sue was lying'), and 'forget'. Such a sentence implies what it does rather than presupposes it, because we cannot assert the sentence and deny the implication, though we could deny a presupposition, if such it were. The verbs of such sentences are called 'factives'.

Sentences stating a person's reaction to a fact also are factives. Expressions used to state a person's reaction to a fact are 'to regret (be disappointed, be sorry, be annoyed, be upset, be hurt, be embarrassed, be surprised, wonder, be glad, rejoice) that' as well as 'it grieves (pains) one that' and 'to deplore (apologize for) someone's doing such and such'. We also react to possibilities. Phrases that we use to express a person's reaction to a possibility include 'to fear (be afraid, be worried, be concerned) that' and 'to consent to someone's doing such and such'.

Desires are clearly attitudes. Among the phrases we use to describe attitudes of desire are 'to wish (hope, pray, prefer) that', 'to want (rely on, count on) someone to do such and such', 'would like someone to do such and such', and also 'to yearn (long, be eager) to do such and such'. Sentences containing 'to wish that' are interesting in that they take a subordinate clause whose mood must be subjunctive and they suggest that the proposition expressed by this clause is false. Such sentences are counterfactual.

Attitudes of contemplation are perhaps the most psychological of all attitudes. We speak of such attitudes when we use such expressions as 'to reflect (conjecture, envisage) that' or 'to contemplate (consider) doing such and such'. These attitudes have remote connections with behavior or maybe even no connections at all. For this reason they give difficulty to the thinker who wants to interpret them behaviorally.

Intentions are another category of attitudes. Phrases used to describe people's intentions are 'to promise (pledge, vow, be determined, mean) that', and 'to intend (mean, seek, aim, try, endeavor, strive, aspire, choose, undertake, have a mind, plan, plot) to do such and such'. Some verbs of propositional attitude, like 'to pretend (feign) that', have a large intentional component, even if they describe more than an intention.

Another group of propositional attitudes are the various moves we make in reasoning. Phrases used to express someone's reaching a conclusion are 'to conclude (prove, show, deduce, predict, find, surmise, hold, adopt the view, reckon, estimate, calculate) that'. For stating that a person concedes a point, we have 'to agree (admit, grant, concede) that'. Phrases used to express other steps of reasoning are 'to assume (suppose, presume, postulate, argue) that'.

In sentences about logical moves we may not substitute even logically equivalent terms. For instance, 'Euclid assumed that parallel lines never meet' does not imply 'Euclid assumed

that corresponding angles produced by an intersecting line are equal', even though necessarily, parallel lines never meet if and only if corresponding angles are equal. Does this mean that logically equivalent propositions are distinct?

There are also sentences reporting what others say. Phrases we have available for reporting include 'to say (report, testify, state, announce, declare, espouse the view, remark, mention, affirm, deny, exclaim) that', as well as 'to tell (inform, notify) someone that'. To specify the way a person says something we use phrases like 'to shout (yell, scream, whisper, murmur, mumble, gloat, snicker, sneer, snivel, snort) that'. Sentences containing these phrases do not express propositional attitudes. Rather, they indirectly quote. When we state a propositional attitude, we try to give a person's meaning. When we indirectly quote someone, we try to give his wording. For instance, suppose Steve whispers 'Gosh she's beautiful', referring to Alice. Anyone who hears Steve's statement may report it by saying 'Steve whispered that Alice is pretty'. The speaker may eliminate indicator words, like 'she', but substituting the synonym 'comely' for 'beautiful' is best avoided if the speaker remembers Steve's wording.

There are numerous other verbs for indirectly quoting. Some of them express various ways in which the speaker means what he says. For instance, when a person explains, he means what he says as an explanation of some problem or puzzle. Phrases we use to express the way in which a speaker means what he says include 'to explain (emphasize, complain, swear, propose, suggest, bet, wager) that'. Suggesting is interesting in that it involves expressing a thought obliquely, unless the speaker is explicit with a formula like 'I suggest that'. When we say that a speaker suggested something, we often do not use his wording if it is oblique. Rather, we present his thought. Suggesting has elements of a propositional attitude.

Some verbs of indirect quotation express the circumstances in which the speaker says what he does. A person can disclose a fact, for instance, only if the fact is not generally known. We indirectly quote and at the same time state the circumstances of the utterance with such phrases as 'to disclose (confess, pronounce, proclaim, testify, foretell, prophesy, claim, guarantee, answer, reply) that'.

Then there are expressions that describe something midway between a propositional attitude and an indirect quotation. In using such expressions we sometimes give a person's words and sometimes his meaning. When we give the speaker's words, we are indirectly quoting. When we give his meaning, we are stating a propositional attitude. Attempts to influence others are like this. To describe our efforts at influencing, we have 'to propose (request, ask, recommend, require, insist) that', 'to assure (warn) someone that', 'to advise

(urge, encourage, entreat, beg, bid, direct, order, command, dare) someone to do such and such', 'to plead with someone to do such and such'.

This compilation of phrases that we use to describe propositional and attributive attitudes is by no means complete, but I hope that it indicates the variety of attitudes and how attitudes fade into indirect quotations. Attitudes are of interest because in describing them we invariably produce sentences opaque for some terms. This has led some thinkers to reinterpret attitudes so that sentences describing them are no longer opaque. This leads to another interest in attitudes. When we construe sentences expressing attitudes extensionally, we construe the attitudes to be about entities of some type. What kinds of entities are they? I shall briefly discuss each of these interests.

Opaque sentences are of interest because of what they show about ordinary extensional logic (the predicate calculus). Much of the impetus for developing a logic is to enable us to determine the deductions we can make from a given statement just by examining the syntax of the sentence alone. But the existence of opaque sentences forces us to look at the content of the statement to determine whether extensional logic applies. It is possible to attribute opacity to a change in the denotation of a term, a change in the scope of an operator, or a nonreferential use of a singular term. Each of these possibilities requires that we look at the content of a statement and not regard the statement as just a sentence with a certain syntax. In this essay I shall consider these ways of construing opaque attitude sentences to see how these different theories affect the semantics of such sentences.

A theory of why sentences about attitudes are opaque may plausibly lead to a theory of what attitudes are. Different theories of what to ascribe the opacity of attitude sentences to lead to different positions on the entities posited by statements made with such sentences. These different positions on the entities that statements about attitudes posit lead to different pictures of how attitudes are related to the world. For instance, can we have attitudes toward objects themselves, or must we have attitudes toward objects under a certain description? Are our attitudes ideas, or are they dispositions toward ordinary objects in the real world?

The discussion of this section has had two purposes. The first has been to specify what attitudes are. As stated above, a propositional attitude is a person's psychological disposition toward a proposition. Accordingly, a typical sentence about propositional attitudes has a person as subject and a clause subordinate to an attitude verb expressing the content of the propositional attitude. Moreover, such sentences are opaque.

The second purpose of this section has been to whet the reader's interest for what is to come. The discussion to this end has been cursory. I shall present a more thorough synopsis of this work in section 5, "Organization and Argument."

### 3 The Fregean Tradition

In this section I shall discuss one of the two great traditions of theorizing on propositional attitudes: the Fregean tradition. This tradition begins with Gottlob Frege. Frege did not write extensively on propositional attitudes. Yet what he did write has proved seminal in producing offspring in the writings of other thinkers, notably Alonzo Church and Rudolf Carnap, whose theories I shall also discuss.

Before I discuss Frege's theory of propositional attitudes, I need to present his semantics. Frege's semantics can best be developed by considering his analysis of a simple sentence like 'Kepler died in misery'. This sentence naturally divides into a proper name ('Kepler') and a concept word ('died in misery'). (Frege used the term 'proper name' [*Eigenname*] to cover any term designating a particular object [see 1984, 186 n. 10, 158]. We would now say 'definite singular term'.)

Each significant part of this sentence has both a sense and a denotation (*Bedeutung*) (see especially Frege 1984, 157–77, and Frege 1979, 118–25). (Where Frege writes 'Bedeutung', translations published by Blackwell have 'meaning' in the sense of 'I mean that one'. I shall use 'denotation', Alonzo Church's translation [1951], because it avoids the ambiguity that 'meaning' has.) A denotation, in Frege's view, is something external in the real world. 'Kepler', for instance, denotes Kepler. In general, a proper name denotes an object; a concept word denotes a concept; and a sentence denotes a truth value.

An object, according to Frege, is anything complete in itself. Objects stand in contrast to functions, which are incomplete, or unsaturated. Concepts are functions whose values are always truth values (see Frege 1984, 146; Frege 1964, sec. 3; and Frege 1979, 119). This notion of concepts makes coextensive concepts identical (see Frege 1979, 122). Truth values are the two possible values a sentence can have: true and false. The sentence 'Kepler died in misery' is true if and only if the concept that 'died in misery' denotes maps the object 'Kepler' denotes to the truth value true.

Sentences are proper names, and truth values are objects (see Frege 1984, 144, 147, 163; Frege 1964, sec. 2; and Frege 1979, 194–95). Frege thus reduces material equivalence to

identity. (Frege *seems* to recant the notion that truth values are objects, when he states “By the truth-value of a sentence I understand the circumstance that it is true or false” [1984, 163]. Yet I think that Frege thought that truth values, though not physical things, are objects. For Frege [1984, 147] objects include abstract entities as well as physical existents.)

Now we come to Frege’s notion of sense. The sense of a sign, or expression, is distinct from both its denotation and its coloring. The sense of a sign is the mode of presenting the denotation of the sign (see Frege 1984, 158). The sense determines the denotation of the sign (see Frege 1979, 124–25, 197–98, and Frege 1984, 159). Senses are objective in that different persons can grasp the same sense (see Frege 1984, 160, 162 n. 7, and Frege 1979, 133–34, 137). Yet senses are not physical; we cannot perceive senses but must grasp them through linguistic forms (see Frege 1984, 360 n. 6, 369, and Frege 1979, 135, 137). Proper names, concept words, and sentences all have senses. The sense of an assertoric sentence Frege called ‘a thought’.

In contrast to the sense of a sign is the coloring, or shading, of a sign. The coloring of a sign is associations and nuances of the sign; it is that part of the content of the sign that does not determine the denotation (see Frege 1979, 198). Experience gives rise to ideas, which are internal images. These ideas are fraught with different feelings and associations according to a person’s experience. So when a sign gives rise to an idea, this idea brings in its train associated ideas. These associations constitute the coloring of the sign. Since associations vary from person to person, coloring is subjective (see Frege 1984, 159–61).

Frege knew that a sentence containing indicator words expresses a thought only in context (see 1984, 357–58). Yet he discusses the sense and denotation of sentences, not statements. I shall accordingly follow Frege’s exposition in presenting his theories. But there is a hint in the place cited that if a sentence contains indicator words, we must appropriately adjust the sentence so that it expresses a thought, before we apply logical theory to it.

That in a nutshell is Frege’s semantics. Frege held as a matter of course that the denotation of the whole is built up from the denotations of the parts (see 1984, 162–63, and 1979, 195). Yet there are sentences containing subordinate sentences that cannot be replaced by a sentence of the same truth value without changing the truth value of the containing sentence. In such cases the denotation of the subordinate sentence cannot be a truth value, or at least cannot be just a truth value. This would seem to count against understanding the denotation of a sentence to be a truth value. One way in which Frege dealt with such sentences was his theory of oblique, or indirect, denotation (see 1984, 176). The importance of this theory for Frege was that it overcame one type of counterexample to his position that the denotation of a sentence is a truth



value. The importance of this theory for us is that Frege's theory of oblique denotation can be applied to sentences expressing propositional attitudes, as Frege did.

Frege's theory of oblique denotation, simply put, is that when substitution based on identity of denotation fails, it is sometimes because the expression involved denotes not its ordinary denotation but its sense. To be precise about what he meant, Frege spoke of the usual denotation and sense of an expression as its customary denotation and its customary sense (see 1984, 159, 166). And these he distinguished from the oblique denotation of the expression (which is its customary sense) and the oblique sense of the expression (a sense that determines a sense as denotation).

Here is an example. 'Peter thinks that Rameau is a philosopher' can be true whether or not there is a Rameau and regardless of whether Rameau is a philosopher. The reason according to Frege's theory is that the subordinate sentence 'Rameau is a philosopher' has not its customary denotation, a truth value, but its oblique denotation, a thought. All that is necessary for the sentence to be true is that Peter think a certain thought. Since the denotations of the components of a sentence alone determine the denotation of the whole sentence, we can substitute for 'Rameau is a philosopher' a clause denoting the same thought (see Frege 1984, 163–64).

Words usually have their customary denotation and sense but on occasion have their oblique denotation and sense. This is one way in which Frege dealt with opaque signs. Frege also held that words sometimes have to be taken twice over: once with their customary denotation and sense and once with their oblique denotation and sense (see 1984, 175). For instance, 'George fancies that Marc Antony betrayed Caesar' expresses two things: that George believes Marc Antony betrayed Caesar and that in fact Marc Antony did not betray Caesar. The subordinate sentence in this sentence has both its oblique denotation and sense and its customary denotation and sense. We can expect such a double entendre to occur any time we have a factive or counterfactual sentence expressing a propositional attitude.

Frege also noted another cause of a word occurring opaquely in a sentence (see 1984, 159, 165). That is when the word designates not its customary denotation or its oblique denotation but itself. Words regularly designate themselves when we quote someone in a sentence. We can quote directly or indirectly. In the case of direct quotation, the quoted words stand between quotation marks. When we quote indirectly, we use a verb of indirect quotation (often one of the verbs of indirect quotation mentioned in section 2, "Propositional Attitudes").

Alonzo Church (1951) developed Frege's theory of sense and denotation by adding a theory of types. Since I shall discuss Church's elaboration of Frege's theory below, I want

parenthetically to show here how Frege has the beginnings of a type theory in his distinctions between function and object, between functions of objects and functions of functions, as well as between functions of a different number of arguments. Functions of objects can take only objects as arguments, and functions of functions of  $n$  arguments can take only functions of  $n$  arguments as arguments (see Frege 1964, secs. 21–23, and Frege 1984, 153).

Frege's reason for these distinctions is this: A function is essentially unsaturated. If a function is saturated, it is no longer a function. Rather, it is the value of the function, which is an object. These distinctions apply all the way up the hierarchy of functions of functions. Moreover, it also applies to concepts, since concepts are functions whose values are truth values (see Frege 1953, p. x; Frege 1984, 188–90; and Frege 1979, 119–20).

Frege was writing at a time when regarding truth values to be objects that a sentence denotes was quite novel. Frege even considered propositional attitudes and other contexts that cause opacity, and that he did attest to the thoroughness of this very careful thinker. To expect a fully developed theory of propositional attitudes from Frege would be unreasonable. Church, however, has formalized Frege's theory of sense and denotation in his paper "A Formulation of the Logic of Sense and Denotation" (1951), and it behoves us to consider this formalization for some of the insights it provides.

In his formalization of Frege's theory of sense and denotation Church's major innovation is adding type theory. Frege, as we saw, had the beginnings of a type theory, but he did not conceive of these beginnings as prophylactic against the antinomies of set theory and predicate logic. To counter the antinomies Church's type theory has to have a much more rigid hierarchy than the type distinctions that Frege made. Interestingly, it also distinguishes truth values from individuals (which roughly correspond to Frege's objects). Functions must be defined for all members of a given type, but functions of individuals need not be defined for truth values, since truth values are not individuals.

Church's type theory goes like this. There are two infinite sequences of types:  $i, i', i'', \dots$  and  $o, o', o'', \dots$ . The type  $i$  is that of individuals. The type  $o$  is that of truth values. The sense of an expression determines both the existence and identity of what the expression denotes (see Church 1956, 9). So no expression lacks a denotation. Senses that determine individuals are of type  $i'$  and are called 'individual concepts'. Senses that determine truth values are propositions and are of type  $o'$ . Propositions correspond to what Frege called 'thoughts'. In general, entities of type  $i$  with  $n + 1$  primes are senses that determine entities of type  $i$  with  $n$  primes, and likewise for entities of type  $o$  followed by  $n + 1$  primes (see Church 1951, 11–12). Names as

ordinarily used have senses of type  $i'$  and denote individuals (type  $i$ ). Sentences have senses that are propositions (type  $o'$ ) and denote truth values (type  $o$ ).

We now come to functions. If  $a$  and  $b$  are types, so is  $(ab)$ . Specifically,  $(ab)$  is the type of a unary function whose arguments are of type  $b$  and whose values are of type  $a$ . So the type of concepts (as Frege used the term, not as Church uses it) is  $(oi)$ . And that of binary truth functions like *and*, *or*, *if ... then* is  $(o(o,o))$ .

On this theory the analysis of 'Plato is wise' works out as follows. 'Plato' denotes an individual, Plato. 'Is wise' denotes a function from individuals to truth values. This function maps all and only wise individuals to true; the others it maps to false. 'Plato is wise' denotes a truth value: true if the function *is wise* maps Plato to true, false otherwise.

It is important to note about this scheme that the denotation of a complex expression depends only on the denotations of its components (see Church 1951, axiom 15). The same is true of senses of expressions. Consequently, when a constituent expression is replaced by another having the same denotation, the denotation of the entire expression stays the same. And when a constituent expression is replaced by another having the same sense, the sense of the whole expression remains unchanged (see Church 1956, 8–9).

A well-constructed formal language should require that every expression of the language be univocal (see Church 1951, axiom 17, and Church 1956, 7–8). Yet in a natural language, expressions in opaque contexts often denote their senses, Church holds (1956, 8). In this he follows Frege. This move allows Church to say, with Frege, that a supposedly opaque expression seems opaque because a component expression does not have its ordinary denotation, and to interpret the expression as one whose denotation depends only on the denotation of component expressions.

For example, consider 'Schliemann sought the site of Troy'. Even though Troy is the same as Ilion, it does not follow that Schliemann sought the site of Ilion, for Schliemann may not have known that Troy is Ilion. If we interpret 'Troy' in the sentence to denote not the city but the sense of 'Troy', we can say that the truth of the sentence depends only on the denotations of the component expressions of the sentence, and that the sentence seems opaque because 'Troy' does not have its ordinary denotation.

It may seem implausible that 'Schliemann sought the site of Troy' expresses a relation between a man and a sense, but this is at least in part because Troy actually existed. Other things that men seek do not exist. Church's analysis of 'to seek' thus becomes more plausible for sentences like 'Ponce de Leon sought the fountain of youth', which we obviously want to

count as true. Yet we cannot count such a sentence as true if 'to seek' expresses a relation between a man and a physically existing thing.

Against this analysis of 'Schliemann sought the site of Troy' one might raise the following objection. If in that sentence 'the site of Troy' denotes its sense, one ought to be able to substitute 'the sense of "the site of Troy"' for 'the site of Troy' in the sentence and have it remain true. But surely Schliemann did not seek the sense of 'the site of Troy'. Church counters this objection by saying that 'Schliemann sought the sense of "the site of Troy"' states a relation not between Schliemann and the sense of 'the site of Troy' but between Schliemann and the sense of 'the sense of "the site of Troy"' (see 1956, 8 n. 20). The semantics of 'to seek' is such that what comes after it denotes its sense rather than its denotation. Since the sense of 'Troy' is the same as that of 'Troia', we may legitimately deduce that Schliemann sought the site of Troia. For here we do have a substitution that conforms to the semantics of 'to seek'.

What sort of entities are senses? Frege conceived of senses as like physical bodies in being nonpsychological and objective (see 1984, 363, and 1979, 133, 134, 148) yet as different from physical bodies in being imperceptible, nonspatial, and timeless (see 1984, 354, 360 n. 6, 363, 369, and 1979, 135, 137, 148). Senses are a kind of entity distinct from both things and ideas (see Frege 1984, 363, 369). (Senses can be objects, however, for an object is anything that is not a function [see Frege 1984, 147]. Indeed, senses are objects when they function as the denotations of words.) We grasp senses in the perceptible garb of a language (see Frege 1984, 354, 360 n. 6). Church describes the sense of an expression as what is grasped when one understands the expression, or what two expressions of different languages have in common when they are correct translations of each other (see 1956, 25).

In the writings of Frege and Church the explication of what senses are is informal, as well it should be. For senses, according to these two authors, are primitive abstract entities. In Rudolf Carnap's work (1956) the case is otherwise. In his theory of language Carnap takes the semantic rules of the language as primitive and defines key notions in terms of semantic rules. Every well-formed expression of the language, according to Carnap, has both an extension and an intension. (Intensions correspond to what Frege and Church call 'senses'.) Informally Carnap tells us that the extension of a name is an individual, the extension of a predicate is a set, and the extension of a sentence is a truth value (see 1956, 40, 19, 26). The intension of a name is an individual concept, the intension of a predicate is a property, and the intension of a sentence is a proposition (see Carnap 1956, 41, 19, 27).

The notions of extension and intension are dependent on the notions of equivalence and logical equivalence. As a general term for names, predicates, and sentences Carnap uses the term ‘designator’. Designators are expressions that denote. Two designators are defined to have the same extension just in case they are equivalent. Similarly, two designators are defined to have the same intension if and only if they are logically equivalent (Carnap uses the term ‘L-equivalent’) (see Carnap 1956, 23).

Examples that Carnap gives make it clear that by ‘logically equivalent’ he means analytically equivalent. Carnap considers the property of being human, for instance, to be identical to that of being a rational animal (see 1956, 18). Two designators are logically equivalent if we can show them to be equivalent by the semantic rules of the language alone (see Carnap 1956, 10). The semantic rules include, of course, the manipulations of the predicate calculus. Carnap does not adequately specify the semantic rules of English or any other language. He provides translations for some of his symbols (see 1956, 4), but these do not help one to see how ‘to be human’ is logically equivalent to ‘to be a rational animal’.

Carnap continues his discussion by introducing the notions of extensional contexts and intensional contexts. He then discusses belief sentences, which he finds to be neither extensional nor intensional contexts. I shall expound these points in turn.

First let me give Carnap’s definitions of extensional and intensional contexts. Let  $c$  and  $d$  be equivalent designators, and let  $a$  and  $b$  be complex designators that differ only in that  $b$  contains  $d$  where  $a$  contains  $c$ . The designator  $a$  is considered extensional for the designator  $c$  if and only if  $a$  is equivalent to  $b$ . Now let the variables  $a$ ,  $b$ ,  $c$ , and  $d$  be restricted as before except that  $c$  and  $d$  are logically equivalent designators. The designator  $a$  is considered intensional for the designator  $c$  if and only if  $a$  is logically equivalent to  $b$  and yet  $a$  is not extensional for  $c$  (see Carnap 1956, 47–48). Thus, for example, ‘Scott is the author of *Waverley*’ is extensional for ‘the author of *Waverley*’, and ‘The author of *Waverley* is necessarily the author of *Waverley*’ is intensional for ‘the author of *Waverley*’.

For Carnap sentences about beliefs are obviously not extensional for designators in the belief content, but neither are they intensional for such terms. The latter point might come as a surprise, as it means that the objects of belief are not propositions (as defined by Carnap’s notion of logical equivalence).

Let me give an example, similar to Carnap’s, of a belief statement in which a logically equivalent sentence cannot be substituted. Let ‘ $s$ ’ stand for an unfathomably complex, logically true sentence. The symbol ‘ $s$ ’ is not a variable, rather it is an abbreviation. It would take ninety-

three and a half pages to write out what 's' is an abbreviation for, but I shall spare the reader that. Obviously, 'Leibniz died of gout' is logically equivalent to 'Leibniz died of gout and s'. Yet from the fact that Peter believes that Leibniz died of gout, it does not follow that he believes that Leibniz died of gout and s (see Carnap 1956, 53–54).

Thus, belief sentences are not intensional contexts, much less extensional contexts. For two designators to be interchangeable in the belief content of a belief sentence without a change of truth value, a stronger sort of equivalence is needed than logical equivalence. Carnap thought that this stronger sort of equivalence is intensional isomorphism.

Two simple designators are intensionally isomorphic if and only if they are logically equivalent. The definition of 'intensional isomorphism' is recursive for complex designators. Two complex designators are intensionally isomorphic just in case they are logically equivalent, they have the same structure, and each component of one designator is intensionally isomorphic to the corresponding component of the other designator. Thus, for example, ' $2 + 5 > 3$ ' and 'Gr [Sum (ii, v), iii]' are intensionally isomorphic; ' $2 + 5 > 3$ ' and 'Gr (vii, iii)' are not, though they are logically equivalent (see Carnap 1956, 56–57).

If two sentences are intensionally isomorphic, what do they have in common? Do they express the same proposition? Intensional isomorphism is defined as above in terms of logical equivalence. Logically equivalent sentences express the same proposition (see Carnap 1956, 27, 32). Since two sentences can be logically equivalent and yet not intensionally isomorphic, two sentences can express the same proposition and yet not be intensionally isomorphic.

Carnap uses the concept of intensional isomorphism to give a solution to the paradox of analysis. The paradox of analysis, briefly, is this: An analysis must either preserve meaning or be informative. If it preserves meaning, it is trivial; if it is informative, it is false. Here is Carnap's solution to the paradox (see 1956, 63–64). Let us call what is analyzed 'the analysandum' and the analysis produced 'the analysans'. An analysis need not preserve meaning. If it preserves meaning, the analysans is intensionally isomorphic to the analysandum, and then the analysis really is trivial. Rather, the analysans need only be logically equivalent to the analysandum. Even if the analysans is only logically equivalent to the analysandum, the analysis is not thereby false.

Here then we have an answer to the question of what two intensionally isomorphic sentences have in common. They express the same meaning. And meanings are different from intensions. So the meaning of a sentence is not a proposition for Carnap (see again 1956, 63–64).

Carnap uses the concept of intensional isomorphism also to analyze belief sentences (see 1956, 55, 62). Carnap assumes that if and only if a person believes something, he is disposed to affirm a sentence in some language expressing his belief. He need not, however, actually affirm a sentence that expresses his belief. Presumably, sentences in different languages are intensionally isomorphic just in case each of their designator parts are logically equivalent according to just the semantic rules of the respective languages. Carnap's analysis of the sentence 'Galileo believed that the earth is round', to use an example, works out as follows: 'Galileo believed that the earth is round' is true in English if and only if there is a sentence in some language that is intensionally isomorphic to 'The earth is round' in English and that if asked, Galileo would affirm as a sentence of that language.

The analysis allows any sentence in English intensionally isomorphic with 'The earth is round' to take its place in 'Galileo believed that the earth is round' without a change in truth value. Moreover, if we substitute for any designator part of 'The earth is round' an intensionally isomorphic designator, the result is a sentence intensionally isomorphic with 'The earth is round'. So more generally, the analysis allows any designator in English intensionally isomorphic with a designator part of 'The earth is round' to take the place of that designator part in 'Galileo believed that the earth is round' without a change in truth value.

For all the insight it provides, there are problems with Carnap's analysis of belief sentences in terms of intensional isomorphism. Above we saw that Roman numerals are intensionally isomorphic with their Arabic counterparts, or so Carnap would have us believe. Hence, 'D' is intensionally isomorphic with '500'. We should therefore expect that 'Jim believes that  $D = 5000$ ' is at least equivalent to 'Jim believes that  $500 = 5000$ '. However, the truth conditions of these two sentences are clearly different. An easy response to this problem is to say that the concept of believing is, like all other propositional attitudes, a very amorphous one: in talking about propositional attitudes, our purposes vary in different contexts.

Carnap thinks that belief sentences are in one sense about sentences and in another sense about propositions (see 1956, 54–55). So he also proposes an analysis in terms of propositions as follows: 'Galileo believed that the earth is round' is true in English if and only if there is a sentence in some language that expresses the proposition that the earth is round, and that Galileo would affirm if asked.

Unfortunately, this analysis does not avoid the problem of incomprehensibly long, logically equivalent sentences. Remember that propositions are identical if and only if logically equivalent. Let '*s*' be some incomprehensibly long, logically true sentence. Hence, 'Galileo

believed that the earth is round' is true in English if and only if there is a sentence in some language that expresses the proposition that the earth is round, and that Galileo would affirm if asked. This is true if and only if there is a sentence in some language that expresses the proposition that the earth is round and *s*, and that Galileo would affirm if asked. And by the analysis, this is true if and only if 'Galileo believed that the earth is round and *s*' is true.

Church (1971a) attacked Carnap's analysis of belief sentences for reducing propositional attitudes to relations to sentences. Church's argument is as follows. Both translation and analysis preserve meaning, or ought to, anyway. Therefore, analyzing 'Galileo believed that the earth is round' and translating it into German ought to produce the same result as translating it into German and then analyzing the German sentence. But the latter route yields 'Es gibt einen Satz auf irgendeiner Sprache, der intensionaler isomorphe zum Satz „Die Erde ist rund“ auf Deutsch besteht, und den Galileo, einmal dar über gefragt, zu best ätigen geneigt w äre', whereas the former route produces 'Es gibt einen Satz auf irgendeiner Sprache, der intensionaler isomorphe zum Satz „The earth is round“ auf Englisch besteht, und den Galileo, einmal dar über gefragt, zu best ätigen geneigt w äre'. Translation does not produce this difference in meaning, so the analysis must. If the analysis produces different meanings, on some occasions it must not preserve the meaning of the original belief sentence. Hence, it must not be an accurate analysis of the original belief sentence.

The trouble with the analysis is that the mentioned sentence is just a string of meaningless signs. When we read the analysis, we naturally read the mentioned sentence as a string of signs and also as a sentence of English. Yet the sentence mentioned in the analysis does not literally mean anything. In contrast, 'Galileo believed that the earth is round' tells us what Galileo believed.

To this argument Carnap can reply, it seems to me, along the following lines. A sentence in some language is intensionally isomorphic to 'The earth is round' in English just in case it is intensionally isomorphic to 'Die Erde ist rund' in German. The analysis seeks just to be logically equivalent to 'Galileo believed that the earth is round'. It does not attempt to preserve meaning. If the analysis meant the same as the analyzed expression, it would be intensionally isomorphic to it. But such an analysis would be trivial (see Carnap 1956, 63–64).

Moreover, it is false that a sentence appearing in quotes is a mere string of signs. If words appearing in quotes were not used but only mentioned, a sentence like 'Shakespeare wrote that an old one in love "loves not to have years told" ' would be ungrammatical. If words within quotes are only mentioned, ' "loves not to have years told" ' is a singular term denoting 'loves



not to have years told'. But to make grammatical sense, the sentence requires a verb and modifiers denoting (perhaps) an attribute (see Davidson 1984, 81).

In this section we saw that we can render opaque sentences expressing propositional attitudes transparent (that is, nonopaque) by interpreting words to denote not their ordinary denotations but their senses instead. There are problems with this view because logically equivalent sentences express the same proposition and so theoretically are interchangeable in a sentence expressing a propositional attitude, yet a person might not realize that they are logically equivalent. We might further require that the sentences be intensionally isomorphic. But even so it is possible to produce intensionally isomorphic sentences that give distinct beliefs (e.g., the belief that  $D = 5000$  and the belief that  $500 = 5000$ ).

#### 4 Quine on Attitudes

In *Word and Object* (1960, sec. 35 and chap. 6) Quine considers but later rejects the idea that attributes and propositions function as the denotations of expressions appearing in the opaque contexts of sentences about attitudes. He repudiates attributes, propositions, and intensions generally because they cannot be individuated. Quine's rejection of intensions leads to a semantics of sentences about attitudes in which the opaque content remains unanalyzed.

In "Quantifiers and Propositional Attitudes" (1976, 185–96) Quine shows how any singular term occurring in a sentence expressing an attitude can occur either transparently or opaquely. Though one expects that two attitude sentences alike except that a singular term occurs transparently in one and opaquely in the other would be logically unrelated, Quine finds that the less transparent sentence implies the more transparent sentence. Quine later repudiates this allegedly logical implication (see 1981, 119–20). In this section I shall review the arguments leading to these conclusions.

Note that 'There is someone who Ralph believes to be a spy' expresses something different from 'Ralph believes that someone is a spy'. The former sentence is true only if there is some individual about whom Ralph holds his belief. The latter sentence is true even if there are no spies, only Ralph believes there are.

We can express 'There is someone who Ralph believes to be a spy' symbolically as '(Ex) Ralph believes  $x$  to be a spy'. What we have here is not a case of quantifying into an opaque context but a sentence that is transparent for the variable ' $x$ ' or the indefinite singular term 'someone'. This transparent concept of belief is often called 'belief *de re*'. Because such a

belief is a relation between an individual and an object about which he believes something, Quine calls it ‘the relational sense of belief’ (1976, 185–88). It is a belief about a particular object that it possesses a given attribute. Such a belief is an attributive attitude.

In contrast we symbolize ‘Ralph believes that someone is a spy’ as ‘Ralph believes  $(Ex) x$  is a spy’. This opaque concept of belief is often called ‘belief *de dicto*’. Quine calls it ‘the notional sense of belief’ (1976, 185–88). Here the belief is about a certain proposition. So this type of belief is a propositional attitude. Other attitudes too have relational and notional senses.

There are also sentences expressing beliefs (in both the notional and relational senses) that involve definite singular terms. We can say, for instance, ‘Tom believes that Cicero denounced Catiline’, ‘Tom believes Cicero to have denounced Catiline’, or ‘Tom believes Cicero and Catiline to stand related as denouncer and denounced’. These sentences are increasingly transparent, or can at least be so understood (see Quine 1960, 149–50).

Quine tentatively suggests that we construe the opaque part of such sentences as naming propositions and attributes (see 1960, 68–69), though he later rejects propositions and attributes as entities, as we shall see below.

We can specify an attribute with an open sentence and a proposition with a closed sentence (see Quine 1981, 104). In Quine’s canonical language propositions have closed sentences as names, and attributes have open sentences as names (see 1960, 164). The singular term ‘[Cicero denounced Catiline]’ denotes the proposition that Cicero denounced Catiline. The one-place attribute of denouncing Catiline has the name ‘ $x[x$  denounced Catiline]’. And for the two-place attribute of denouncing there is the name ‘ $xy[x$  denounced  $y$ ]’. Attributes of two or more places are sometimes called ‘relations in intension’, but I shall lump relations in intension in with attributes and distinguish them by their number of places if need be.

Reexpressed in the canonical language the sentences expressing Tom’s beliefs become ‘Tom believes [Cicero denounced Catiline]’, ‘Tom believes  $x[x$  denounced Catiline] of Cicero’, and ‘Tom believes  $xy[x$  denounced  $y$ ] of Cicero and Catiline’. The first sentence expresses a propositional attitude; the latter two, attributive attitudes.

For Quine (1960, 151), if one cannot in general substitute a codesignating singular term, a coextensive general term, or a materially equivalent subordinate sentence in a designator without changing the denotation of that designator, the designator is opaque for that term. Since making such substitutions within a term for an intension would change the intension, any term denoting an intension is opaque within the brackets (see Quine 1960, 169).

Open and closed sentences do not precisely specify attributes and propositions because our sentences often depend on context to clarify their meaning. For instance, ‘denounced’ in the past tense indicates that Cicero’s denouncing Catiline took place at a time prior to when the speaker uttered the sentence. Indicator words include pronouns, demonstratives, and verbs expressing tense. To include the references of such indicator words Quine spells out all such references in what he calls ‘eternal sentences’, sentences whose truth values remain invariant in different circumstances of utterance (see 1960, 193).

Quine uses eternal sentences to replace propositions in logical theory. So if an ordinary sentence fails to specify a proposition, we need to specify the references of indicator words so that the resulting eternal sentence does. Thus, instead of ‘[Cicero denounced Catiline]’ I should write ‘[Cicero denounces Catiline prior to time  $t$ ]’, where  $t$  is when the speaker uttered the sentence. In this way we get a sentence that really does indicate a proposition. In section 8, “Referential versus Attributive Use,” I shall make this move myself to specify statements. For now, however, I shall avoid excessive refinements, because at this stage of the argument merely indicating the move suffices, I think.

If we assert a sentence with terms that denote attributes, we end up reifying attributes. If we are to stand on firm philosophical ground, what conditions must be satisfied for reifying abstract entities like attributes? The entities, Quine has proposed (1969a, 19, and 1981, 101–3), must be individuable. That is, we must be able to tell when the entities are the same or different.

It makes no sense to point twice and say ‘This is the same as this’, for one may have pointed once to a dog and another time to its ear. Identity makes sense only relative to a sortal term, like ‘dog’ (see Quine 1974, 59). Sortal terms (Quine calls them ‘general terms’) provide criteria for individuating their denotations (see Quine 1974, 85–86). They are terms that form a plural, can take quantifiers (like ‘some’ and ‘many’), can be used with numerals, and can take the indefinite or definite article (‘a’ and ‘the’).

This notion of what is individuable may seem satisfactory: the syntax of sortal terms provides criteria of what is a sortal term, and sortal terms provide criteria of individuation. But some sortal terms do not do such a great job of individuating their denotations. ‘Notes’ is a good sortal term, yet how many notes does a trombonist play as he draws in his slide? ‘Notes’ may be a sortal term that individuates only relative to a particular scale. Well then, how about musical timbres or smells or ambulatory gaits or architectural styles (these examples are from Strawson 1976, 195)? We lack good criteria for individuating these things though our terms for them are sortal. Meanings too, Quine has argued (1961, 20–37), cannot be individuated well,

yet ‘meanings’ is a sortal term. Clearly, Quine does not hold that all sortal terms individuate their denotations well.

Quine further requires that speakers use the sortal term with the referential apparatus of English in a way that consistently divides up its denotation in the presence of sundry stimulations. If the sortal term is ‘apples’, say, we can tell whether and how ‘apples’ divides its denotation by querying an English speaker about ‘that apple’, ‘not that apple’, ‘an apple’, ‘the same apple’, ‘another apple’, ‘these apples’ in the presence of apples (see Quine 1960, 93).

Now let us examine whether propositions and attributes, the objects of attitudes, can be individuated well. Let us consider attributes first. What is an attribute? Another word for ‘attribute’ is ‘property’. The usual criterion for when two attributes are identical is:  $x[Fx] = x[Gx]$  if and only if ‘ $(x)(Fx \equiv Gx)$ ’ is analytically true (see Quine 1961, 28–29).

How do attributes differ from sets? Two sets are the same if the following condition holds:  $\{x:Fx\} = \{x:Gx\}$  if and only if  $(x)(Fx \equiv Gx)$ . Hence, coextensive attributes determine the same set. Attributes differ from sets, Quine emphasizes (1981, 105–6), only in their identity conditions, or how they are individuated.

Propositions, like attributes, are intensions. With little modification we can derive identity conditions for propositions from those for one-place attributes. Let  $p$  and  $q$  be propositional variables, variables for which we substitute sentences. Two propositions are the same if the following condition holds:  $[p] = [q]$  if and only if ‘ $p \equiv q$ ’ is analytically true (see Quine 1961, 32).

Let  $a$  and  $b$  be individual variables, variables that can occupy only places for singular terms. Leibniz has taught us that  $a$  is identical to  $b$  if and only if  $a$  is a member of  $\{x:Fx\}$  just when  $b$  is a member of  $\{x:Fx\}$ . But what about individual concepts? Two individual concepts are identical when the following condition is satisfied:  $[a] = [b]$  if and only if ‘ $a = b$ ’ is analytically true (see Quine 1961, 32).

The identity conditions for intensional entities of all three types—attributes, propositions, and individual concepts—make use of the notion of analyticity. Yet, Quine argues (1961, 20–46), the notion of analyticity is unclear. Briefly, Quine’s argument goes like this: The concepts of analyticity, meaning, and synonymy are interdefinable. But if we follow the logical connections of these concepts, we end up going around in circles and making no progress. We cannot attain an account that distinguishes the analytic sentences from the synthetic ones in terms of dispositions to verbal behavior (see Quine 1960, 207). Hence, there is no clear division between analytic and synthetic sentences. The identity conditions of attributes, propositions,

and individual concepts thus do not clearly individuate these intensional entities. So we are unjustified in positing them.

Quine's argument merits detailed examination, as it is central to his philosophy. So let us consider various attempts to explicate analyticity and see why they fail.

A sentence is analytic when it is true in virtue of its meaning (see Quine 1961, 21). There are analytic sentences of two types. There are those that are logically true, true on account of logical structure. The logical structure of a sentence is determined by its logical particles: 'all', 'no', 'some', 'un-', 'not', 'or', 'and', 'if ... then', 'if and only if', and so on. Thus, a sentence is logically true if and only if it is true on account of the meaning of its logical particles. More precisely, a sentence is logically true if and only if it is true no matter what we substitute for its nonlogical terms (provided we substitute identical terms for identical terms and keep the sentence well formed) (see Quine 1961, 22–23, and Quine 1976, 109–10). An example of a logically true sentence is 'No unmarried man is married'.

Analytic sentences of the second type are not logically true but can be transformed into such sentences by substituting synonyms for synonyms (see Quine 1961, 22–23). Synonyms, of course, are terms that mean the same. An example of an analytic sentence of the second kind is 'No bachelor is married'. This sentence can be transformed into the preceding logically true sentence by substituting 'unmarried man' for 'bachelor'.

We have paraphrased analyticity in terms of meaning and synonymy, but these concepts too need to be explicated. We still lack a criterion that enables us to discriminate analytic sentences (of the second type in particular) from synthetic ones. We can adequately discriminate logically true sentences from nonlogically true sentences. This is because there are only a limited number of logical particles and the relevant substitutions depend largely on linguistic form. Analytic sentences of the second type, in contrast, are true because of how the meanings of some nonlogical terms relate to one another. But these nonlogical terms are of unlimited variety. Hence, relations among their meanings show even greater variety. For instance, is 'Whatever is green is extended' analytic or synthetic (Quine's example, 1961, 32)? The question is difficult to answer because our notion of greenness is not precise enough for us to know whether it includes the notion of being extended. As a result, the analytic truths cannot be systematically delimited as the logical truths can (see Quine 1976, 130). We can describe analytic truths as those truths that we can transform into logical truths by substituting synonyms for synonyms. But explaining analyticity in terms of synonymy is no advance, for the problem of explicating synonymy *is* the problem of explicating analyticity.

Why does analyticity resist definition in terms that allow us to pick out analytic truths? The reason, Quine argues (1976, 131), is that meaning is intricately bound up with fact. A researcher introduces a new term for a thing or phenomenon with a definition. He then discovers new facts about it. Often these new facts help to delineate the thing or phenomenon more clearly. Has the meaning of the new term changed, or do we just know more about the new thing or phenomenon? One way to convince oneself that meaning and fact are intricately intertwined is to take a dictionary and look at several definitions. See how often definitions state what one is inclined to call 'fact'.

In *The Roots of Reference* Quine offers yet another definition of 'analytic': "a sentence is analytic if *everybody* learns that it is true by learning its words" (1974, 79, Quine's emphasis). But because this definition depends on everybody, *one* cannot always say whether a sentence is analytic or not.

We have failed adequately to distinguish analytic truths from synthetic truths. Since the individuation of meanings (propositions, attributes, and individual concepts) depends on the notion of analyticity, we have failed to individuate meanings. If we cannot individuate meanings, we cannot tell when we have one meaning and not another (as the sentence about green things shows). So we have no business positing meanings. (See Strawson 1976 for an argument against individuation as a criterion for positing meanings.)

Earlier in this section I presented Quine's tentative analysis of 'Tom believes that Cicero denounced Catiline' as expressing a relation between an individual, Tom, and a proposition, [Cicero denounced Catiline]. In Quine's canonical language the sentence 'Tom believes [Cicero denounced Catiline]' expresses this relation. Similarly, 'Tom believes Cicero to have denounced Catiline', we tentatively maintained, expresses a relation among Tom, Cicero, and the attribute  $x[x \text{ denounced Catiline}]$ . The sentence 'Tom believes  $x[x \text{ denounced Catiline}]$  of Cicero' expresses this ternary relationship in Quine's canonical language.

However, if propositions and attributes go, then so must this analysis of belief sentences. What replaces it is Quine's view that verbs of propositional attitudes form operators that operate on sentences to produce complex predicates (see 1960, 216). 'Tom believes that Cicero denounced Catiline', for example, has the form *Fa*. 'Believes that' combines with the sentence 'Cicero denounced Catiline' to form a complex predicate true of Tom. Note that in this analysis sentences do not function as the objects of propositional attitudes. This analysis does away with objects of the propositional attitudes in favor of complex predicates. Similarly, in 'Tom believes Cicero to have denounced Catiline', 'believes' combines with the infinitive phrase 'to

have denounced Catiline' to form a complex relative term true of Tom and Cicero. Quine thus capitulates here. He takes the content of the attitude and the verb expressing the attitude to form a logically opaque whole. In the first example this opaque whole is 'believes that Cicero denounced Catiline', and in the second one it is 'believes ... to have denounced Catiline'.

Quine also offers a linguistic analysis of sentences about attitudes at the end of "Quantifiers and Propositional Attitudes" (1976, 193–96) and in "Intensions Revisited" (1981, 118–23). According to this analysis, if Tom has a notional belief, we can express it with 'Tom believes "Cicero denounced Catiline" '. And if Tom has a relational belief, we can express it with 'Tom believes "x denounced Catiline" of Cicero' (see Quine 1981, 118, and Quine 1976, 194). The opaque content of these sentences is cordoned off by the double quote marks.

As we saw toward the end of section 3, "The Fregean Tradition," Church in an argument that makes use of translation (1971a) argued against Carnap's linguistic analysis of belief sentences. Church's argument applies also to Quine's linguistic analysis of sentences about attitudes. The conclusion of the argument is that Quine's analysis of a sentence expressing an attitude produces a result that differs in meaning from the original sentence. Quine accepts this argument and claims that his analysis produces a result that agrees with the original attitude sentence only in truth value (see 1976, 195–96).

Throughout this section I have followed Quine and distinguished sentences about notional beliefs from sentences about relational beliefs. The two types of belief are related, Quine holds (1976, 190), in that notional beliefs imply relational beliefs. Quine calls this deduction 'exportation'. Robert Sleight (1968, 397 n. 9), however, finds exportation too powerful. Sleight's criticism causes Quine to view sentences about relational beliefs as nonsense (see 1981, 119–22). Let us take a closer look at these arguments.

An example of a sentence expressing a notional attitude is 'Winslow wants someone to be president'. An example of a sentence expressing a relational attitude is 'There is someone whom Winslow wants to be president'. The notional sentence, Quine holds (1976, 185, 187), says that Winslow wants a certain form of government, whereas the relational sentence says that Winslow knows his man. In general, existential sentences of relational attitudes express an attitude about a particular person or thing, whereas the subject need not have a particular person or thing in mind for an existential sentence about a notional attitude to be true, or so Quine would have us believe (see 1976, 185–87).

As we saw earlier in this section, sentences about notional and relational attitudes need not be quantified. Singular terms can also figure in such sentences about attitudes. An example of a

sentence about a notional, propositional attitude is ‘Ralph believes that Ortcutt is a spy’. And one that expresses a relational, attributive attitude is ‘Ralph believes Ortcutt to be a spy’ (see Quine 1976, 188–89). Exportation is the deduction of a sentence about a relational attitude from a sentence about a notional attitude. It is so called because a singular term that appears within the opaque content of the notional sentence is exported to a position outside of the opaque content of the relational sentence. Quine viewed exportation of a singular term as in general “implicative” (1976, 190), or “valid” (1981, 119).

Sleigh, however, argues that exportation is not valid, by presenting a counterinstance (see 1968, 397 n. 9, and 1967, 28). Suppose that Ralph believes there are spies. Moreover, Ralph believes that in any group of humans only one is the oldest. If he puts these beliefs together, he will believe that the oldest spy is a spy. From this belief of Ralph’s we can deduce by exportation that Ralph believes the oldest spy to be a spy. And this implies that there is someone whom Ralph believes to be a spy. Exportation thus seems to be too strong, for if Ralph is like most of us, he believes there are spies, yet there is no one in particular about whom he has this belief (see Quine 1976, 186). If we can deduce a sentence about a relational belief from a sentence about a notional belief, the sentence about the relational belief is no stronger than the sentence about the notional belief, contrary to what we expect. So exportation is not a deduction.

This reasoning leads Quine to reject sentences about relational attitudes as a species of sentences embodying quantification into opaque contexts (see 1981, 121–22), which, Quine argues (1961, 146–50), produces nonsense. He rejects sentences about relational attitudes, that is, except as situated in their contexts (see 1981, 121). For a context, barring irresponsible use of language, makes the purposes of the discourse clear. When we seek to establish someone’s identity, we seek sometimes what he looks like, sometimes his name, sometimes a relevant description. The context should make clear what we seek. If Ralph knows Ortcutt in the relevant sense, then we can say that Ralph believes Ortcutt to be a spy. Perhaps Quine thinks that the context gives the relevant singular term denoting Ortcutt for one to state Ralph’s notional attitude, e.g., ‘Ralph believes that the man he saw lurking in the shadows is a spy’. But out of context ‘Ralph believes Ortcutt to be a spy’ and ‘There is someone whom Ralph believes to be a spy’ do not express clearly delineated purposes. Out of context these sentences involve quantification into opaque contexts. (We can say this of the former sentence only if we go along with Quine and hold that singular terms involve hidden quantification; see section 12,



“Quine’s Behavioral Understanding of Attitudes.”) And quantifying into an opaque context produces nonsense.

Such are Quine’s views on sentences about relational attitudes. I, however, think we need not go so far as to say that sentences about relational attitudes are nonsense. First of all, a sentence about a relational attitude is stronger than a sentence about the corresponding notional attitude, since the sentence about the relational attitude presupposes that a certain object exists. As David Kaplan points out (1975, 219–20), in order to export a singular term in a sentence about a propositional attitude we need to know that the singular term denotes a unique object. That is, ‘Ralph believes that Ortcutt is a spy’ implies ‘Ralph believes Ortcutt to be a spy’ only if ‘Ortcutt’ uniquely denotes Ortcutt.

But Kaplan thinks that to justify exporting a singular term out from the opaque content of a sentence expressing a propositional attitude, more is required than that the singular term denote a unique object. It must also represent that object to the subject of the sentence about the propositional attitude, Kaplan maintains (1975, 231). Three conditions must hold for a singular term to represent an object to a person. (1) It must denote the object. (2) It must be *of* the object for that person. That is, the singular term must have a history for that person that adequately connects the denoted object to the person. (3) The singular term must call forth a sufficiently vivid, or detailed, picture in that person’s mind.

In this section we saw why Quine rejects propositions as the objects of propositional attitudes and attributes as the objects of attributive attitudes. He does so because we have no way of consistently individuating propositions and attributes in terms of verbal dispositions to react in certain ways in the presence of sundry stimulations. Nor does he think it likely that we will find a way to individuate meanings, because fact and meaning are so interrelated in our theories and ordinary discourse.

Quine then proposes two alternative ways of construing sentences about attitudes. (1) The opaque part of a sentence about an attitude, though linguistically complex, is a logically simple predicate. In a sentence about a propositional attitude, for example, a verb of a propositional attitude combines with ‘that’ and a sentence to form a logically simple predicate (see Quine 1960, 216). (2) In the opaque part of a sentence about an attitude words actually denote themselves. That is, the objects of propositional attitudes are linguistic expressions (see Quine 1976, 194–96, and Quine 1981, 118–19).

An additional point of discussion was that Quine ended up rejecting sentences about relational attributive attitudes as nonsense except in contexts that make purposes clear. Out of context they exhibit quantification into opaque contexts.

## Denotations and Opacity

### 5 Organization and Argument

The overarching goal of this work is to clarify the semantics of ordinary-language statements about attitudes. The type of semantics that I seek for statements about attitudes is a denotational semantics. I follow in the tradition of Frege, Russell, and Quine, in whose writings denotational semantics loom large.

These writers, however, developed semantics for sentences. Consequently, they missed some of the effects that usage has on the logic of statements about attitudes. Specifically, whether a speaker uses a singular term referentially or attributively determines whether he is stating a propositional attitude or a relational attributive attitude. The same *sentence* can often be used either way.

Thus, the first major project of this essay will be to specify the logic of statements about attitudes. To do this I shall present Donnellan's distinction between the referential and the attributive use of singular terms in section 8, "Referential versus Attributive Use." Then I shall apply Russell's theories of descriptions and of logically proper names to the specification of a statement about an attitude to make explicit the transparent and opaque places in the specification of the statement. This will happen in section 9, "Use Made Explicit," and section 10, "When Does a Term Occur Transparently?"

In Russell's semantics the same term denotes the same entity in any context: extensional or intensional. In the theories of Frege and Quine, in contrast, a term denotes an object, a set, or a truth value in extensional contexts and an entity of some other type in sentences about attitudes. Frege has terms denoting senses in such contexts;

Quine makes expressions the denotations. I shall present the theories of Frege and Quine in chapter 3, "Ambiguity of Denotation and Opacity."

The way in which we use Russell's semantics to explain opacity is this. Whether the context be extensional or intensional, logically proper singular terms always denote objects, predicates denote attributes, and sentences denote propositions. The task of section 10, "When Does a Term Occur Transparently?" is to determine when a singular term occurs opaquely in a statement of an attitude. If a singular term occurs opaquely, we apply Russell's theory of

incomplete symbols to replace the singular term with an expression containing predicates. The burden of opacity then falls on the predicate.

Predicates ordinarily denote attributes in Russell's semantics. Predicates may have the same extension (a set) even though they denote different attributes. Because coextensive predicates are not interchangeable in the attitude content of a sentence about an attitude, predicates occur opaquely in the attitude content of sentences about attitudes. Coextensive predicates are interchangeable in extensional contexts, but substitution in these contexts is based on the fact they are coextensive, not on identity of denotation. So I argue in section 13, "Incomplete Symbols and Opacity."

Yet Russell's theory of incomplete symbols does not explain opacity unless predicates denote attributes and sentences denote propositions. We lose this explanatory ability if we assign predicates and sentences extensional denotations. This is the thesis of section 14, "The Need for Intensional Entities."

Exportation has provided an important impetus for theorizing on the epistemic conditions that must be satisfied for a statement of a relational attributive attitude to be true (see Kaplan 1975 in particular). Exportation is exporting a singular term from within the attitude content to outside the attitude content, allegedly deducing a relational attributive attitude from a propositional attitude. In section 10, "When Does a Term Occur Transparently?" I argue that the truth conditions for a statement about a relational attributive attitude are independent of those for a statement about the corresponding propositional attitude. Accordingly, I find in section 15, "Exportation," that the supposed deduction of exportation is not really a deduction at all.

The clarity I bring to statements about attitudes is that I specify when a term in a sentence about an attitude is opaque and when transparent and what the truth conditions are for statements about attributive and propositional attitudes. Moreover, I present a semantics that works reasonably well for both extensional and intensional contexts.

In this overview of the work in hand I glossed over some fine points in order to present the big picture. For details I refer the reader to the following pages.

## **6 The Quest for Transparency**

In this section I shall discuss the theoretical reasons for trying to construct a semantic theory that assigns designator terms denotations in a way that makes them occur transparently even in

intensional contexts. The purpose of this section is to motivate the project of trying to construe sentences about attitudes to be transparent for the terms they contain.

In section 4, “Quine on Attitudes,” we saw that Quine finds the notion of synonymy lacking. The notion requires, he reasons, that we individuate senses. Yet we cannot do this satisfactorily, that is, in terms of verbal or other dispositions to react consistently in the presence of sundry stimulations. Because the notion of synonymy lies on unfirm ground, analysis, if it is to proceed on firm ground, ought to produce an understanding identical with the concept analyzed not in meaning but in truth conditions (see Quine 1960, 259).

Indeed, the idea that analysis seeks to produce an understanding synonymous to the analyzed concept is paradoxical. For then either the analysis is trivial, since the understanding is synonymous, or it is false, because the understanding is not synonymous (see Carnap 1956, 63–64). Let me expand on this point. Let us call the concept analyzed ‘the analysandum’ and the analysis produced ‘the analysans’. If the analysans is identical in meaning to the analysandum, it conveys only what the analysandum conveys and hence is trivial. If the analysans is not identical in meaning to the analysandum, it fails to be an analysis, since on the notion of analysis under consideration, the analysans should be synonymous to the analysandum.

Because we lack adequate criteria of when expressions or concepts are synonymous, the notion of synonymy is not just a vague distinction but is no distinction at all (see Quine 1981, 100–103). If we require that analysandum and analysans be analytically equivalent, the analysis ends up being trivial. And anyway, the purpose of analysis is not to preserve meaning but to clarify (see Quine 1960, 159–60). To preserve meaning, we would have to render vagueness with vagueness, ambiguity with ambiguity. But if we sharpen vague points or resolve ambiguity, we are clarifying. We cannot, of course, claim that the analysans is analytically equivalent to the analysandum. But Quine claims only that his analysis of a sentence about an attitude is truth-functionally equivalent to the original sentence (see 1976, 195–96).

Donald Davidson (in “Truth and Meaning” 1984, 17–36) has carried this line of thought one step farther. Since we cannot individuate senses, we cannot expect a theory of meaning to provide any philosophical clarity on what a sentence means. A semantic theory that gets the truth conditions of any sentence right is the best we can hope for and serves as an adequate substitute for a theory of meaning. Let us take a detailed look at Davidson’s theory of meaning to understand the implications for a semantics of statements about attitudes.

Let us call the sense of a singular term ‘an individual concept’, the sense of a predicate ‘an attribute’, and the sense of a statement ‘a proposition’. (A statement here is just a sentence with the reference of indicator words specified.) As we saw at around the middle of section 3, “The Fregean Tradition,” Church in developing Frege’s theory of sense made attributes functions from individual concepts to propositions. Yet this theory of sense explains nothing, Davidson argues (1984, 20–21). If we seek the sense of ‘Plato is wise’, we make no progress in the discovery that it is a function of the sense of ‘Plato’ and the sense of ‘is wise’. We are just as in the dark about the senses of these terms. For the sense of ‘Plato’ is the contribution it makes to the sense of all sentences in which it figures, and likewise for ‘is wise’.

Why do we want to know the sense of a sentence? For one, we want to be able to tell whether the sentence is true or not. That is, we want to know under what conditions the sentence is true. Well, ‘Snow is white’ is true if and only if grass is green. Specifying the truth conditions of ‘Snow is white’ obviously falls short of specifying the sense of ‘Snow is white’. Hence, we can make no claim that the specification of the truth conditions of a sentence are synonymous with the sentence. Yet specifying the truth conditions of a sentence “plays its role in determining the meaning of [the sentence] not by pretending synonymy but by adding one more brush-stroke to the picture which, taken as a whole, tells what there is to know of the meaning of [the sentence]” (Davidson 1984, 26). By giving the truth conditions of every sentence in the language, or at least by providing a semantics for the language that enables one recursively to generate the truth conditions for any sentence in the language, a semantic theory acceptable to Davidson will paint a picture that enables one to see how a word contributes to determining the truth conditions of any sentence in which it figures. And that is all there is to understanding the meaning of a word.

One consequence of Davidson’s position is that no distinction appears in the theory between analytically true sentences and contingently true sentences (see 1984, 33). In other words, in constructing the semantic theory it matters not whether we engage in lexicography or science to come up with the truth conditions for a given sentence.

It is simple to come up with the truth conditions of sentences that do not contain indicator words. Disquotation is all that is involved. For example, ‘Snow is white’ is true if and only if snow is white. But if the sentence contains indicator words, we have to specify the context of utterance (see Davidson 1984, 34–35). For instance, ‘That book was stolen’ spoken by *a* at time *t* is true if and only if the book *a* demonstrates at *t* was stolen prior to *t*. Davidson thinks that indicator words require that we relativize truth to contexts. But there is another way to view this

development. By giving the sentence and specifying the context of utterance we are specifying a statement. Hence, in Davidson's theory statements primarily have truth values, and sentences derivatively have truth values, and only if they contain no indicator words.

If a semantic theory is to model our understanding of statements, it must do more than merely give the truth conditions of statements. It must also give the truth conditions in a recursive manner. After all, we have the ability to understand an unlimited number of sentences in context after learning a limited vocabulary and an even more limited system of syntax. So for the semantic theory to model this aspect of our understanding of a language, it must be learnable, and hence recursive, just as the language is learnable (see Davidson 1984, 17, 25).

Constructing such a theory is quite easy for an extensional language. As denotations, assign the thing named to each singular term. To each predicate assign the extension of the predicate. And for an atomic sentence consisting of singular term and predicate, assign the value true to the sentence just in case the thing denoted by the singular term is in the extension denoted by the predicate. Truth functions and quantifiers are handled in familiar ways. Modifiers of general terms denote functions from extensions to extensions. A conjunctive compound predicate denotes the intersection of two extensions; a disjunctive compound predicate denotes the union of two extensions. In the remarks of this paragraph I seek merely to indicate the recursive nature of the semantic theory envisioned.

If a semantic theory is to model our understanding of statements of attitudes, it must give the truth conditions of such statements in a recursive manner. Doing so amounts to giving the denotations of terms even in the opaque content of statements of attitudes. What makes this task difficult is that we often have attitudes about nonexistent. An extensional, atomic sentence about nonexistent ('Pegasus flies', 'Unicorns graze on clover') is either false or makes no statement at all. Yet attitude statements about nonexistent (e.g., 'Margaret believes that Pegasus flies', 'Charles thinks that unicorns graze on clover') are often true. The truth conditions of these statements obviously do not depend on there being a Pegasus that Margaret believes flies or on there being unicorns that Charles thinks graze on clover. Hence, the simple semantics given above (singular terms denote their nominata; predicates denote their extensions) does not work for statements about attitudes.

Quine, who wants to keep logical theory extensional (see 1981, 100), proposes that we conceive designator terms in intensional contexts to denote nothing (see 1960, 216). The attitude content and the verb expressing the attitude form a logically opaque whole. This we saw in the middle of section 4, "Quine on Attitudes." But if we accept Davidson's strictures on

an acceptable semantic theory (the semantic theory must enable one to see how a word contributes to determining the truth conditions of any statement in which it plays a role), Quine's proposal of logically opaque wholes becomes unacceptable. This consequence may well be one that Quine would accept, for he favors an account of meaning in terms of truth conditions, and he acknowledges that a semantic theory that shows how a word contributes to determining the truth conditions of any sentence in which it occurs is more satisfactory than one that does not (see Davidson and Hintikka 1975, 344).

This section has sought to show why we want to construct a semantics that recursively generates the truth conditions for any statement in the language. The project is interesting in itself, for we need to know when statements in our language are true and when false. Yet we have an additional motive for undertaking the project when we see a theory of truth for a language as providing all that we may reasonably ask for when seeking the meaning of statements in the language. We have also seen in this section that if the semantic theory is to model our understanding of statements, it must enable one to see how a word contributes to determining the truth conditions of any statement in which it figures, which is all there is to the meaning of a word. A semantic theory shows how parts determine the truth conditions of the whole only if designator terms in intensional contexts denote something (even if only an abstract entity). Hence, an adequate semantic theory must assign denotations to all designator terms, even when they occur in intensional contexts.

## **7 Russell's Theory of Incomplete Symbols**

With this section I begin a major project of this essay. I shall present Russell's theory of descriptions in this section. Then in section 8, "Referential versus Attributive Use," I shall present Donnellan's distinction between the referential and the attributive use of a description. In section 9, "Use Made Explicit," I shall explicate Donnellan's distinction in terms of Russell's theories of descriptions and of logically proper names. Finally, in section 10, "When Does a Term Occur Transparently?" I shall use this application of Russell's theories to Donnellan's distinction to explain when a singular term occurs transparently in a statement and when opaquely.

According to Russell's theory of descriptions a description need not denote. In Frege's theory, on the other hand, we need to insure that every description denotes a unique object. Since Russell's theory contrasts with Frege's theory in this way, a brief sketch of Frege's



theory will show one of the advantages of Russell's theory. I am interested in Russell's theory of descriptions for its treatment of nondenoting singular terms. In section 9, "Use Made Explicit," I shall use Russell's theory of descriptions to explain how attributively occurring singular terms need not designate.

I discussed Frege's semantics in section 3, "The Fregean Tradition." Since Frege's semantics is relevant to his theory of descriptions, let me review Frege's semantics here. Proper names (or singular terms), predicates, and sentences have a sense and normally a denotation. A proper name denotes an object; a predicate a concept; and a sentence a truth value (see Frege 1984, 281, 298). A proper name expresses a sense that determines an object; a predicate expresses a sense that determines a concept; and a sentence expresses a thought (a sense that determines a truth value). Frege conceived these entities to function mathematically: in the realm of denotations, concepts are functions from objects to truth values; in the realm of senses, senses of concepts are functions from senses of proper names to thoughts.

In logic we are concerned with truth (see Frege 1984, 226). Hence, concepts must be functions that yield truth values for any argument, and every singular term must determine a unique argument (see Frege 1984, 148, 169, 298). Sometimes singular terms fail to denote. In a logically perfect language one should admit only simple proper names that do denote. If the language allows definite descriptions, one should assign an arbitrary denotation to a description that fails uniquely to denote an object (see Frege 1984, 169, and Frege 1964, 50). What this arbitrary denotation is does not matter (see Frege 1984, 148 for a similar statement about concepts).

Problems arise when we try to apply Frege's theory to natural language. In a natural language, it is the community of speakers as a whole that determines the senses and denotations of terms of the language. When a singular term fails to denote, language theorists cannot assign it an arbitrary denotation. So when a singular term lacks a denotation, it determines no argument for the concept function, and the concept that the predicate denotes cannot determine a truth value.

Frege acknowledged this possibility. When a person asserts a sentence, he presupposes, Frege held (1984, 162, 168), that the singular terms in his sentence denote objects (see also Atlas 1975, 29–31). If this presupposition fails, the speaker does not make a statement that is true or false (see Frege 1984, 162). Peter Strawson (1971, 9–11) has made this consequence of Frege's theory well known. Yet the speaker of a sentence expresses a thought even if a singular term fails to denote. For his thought is a function of the senses of the singular terms and

predicates occurring in his sentence and does not depend on the denotations of the singular terms he uses.

Russell thought that denoting phrases have no senses and only sometimes denote (see 1956, 46 n. dagger). He thus avoids a mysterious realm of senses yet retains all that is necessary for a theory of scientific discourse. For Russell a denoting expression means what it denotes (see 1938, sec. 51; 1962, 103; and Whitehead and Russell 1927, 66). Russell thus identified meaning with denotation. Logically proper names denote objects, predicates denote propositional functions, and sentences denote propositions (see Russell 1938, sec. 48, and Whitehead and Russell 1927, 8, 14–15, 66). Since a proposition is a compound entity, a sentence consisting of a logically proper name joined to a predicate denotes a proposition containing the object itself (see Russell 1938, 45, 47). ‘Socrates is wise’, for example, denotes the proposition consisting of the propositional function of being wise joined to Socrates himself.

Interpreting sentences like ‘The king of France is bald’ was a problem for Russell. Such sentences appear to be significant. But since ‘the king of France’ fails to denote, ‘The king of France is bald’ has no associated proposition, it would seem. For Russell (1956, 46) such sentences are significant (that is, they express propositions) but are false. Russell interpreted ‘The king of France is bald’ to be false by taking the sentence to assert, rather than to presuppose, that there is a king of France. Russell intended his theory of descriptions to refine ordinary English usage rather than to analyze it (see 1957, 388). According to Russell (1956, 51), we should understand ‘The king of France is bald’ to assert that there is a unique king of France and he is bald. In symbols this becomes

$$(Ex)[(y)(y \text{ is king of France} \equiv y = x) \ \& \ x \text{ is bald}]$$

(see Whitehead and Russell 1927, 68).

In Russell’s analysis of definite descriptions, the description ‘the king of France’ gets analyzed away, and no singular term remains that appears to denote the king of France. ‘The king of France’ plays a role in determining the truth value of any sentence in which it occurs. But it has no significance on its own account (see Russell 1956, 51), that is, it does not denote apart from its context. Whitehead and Russell called such symbols ‘incomplete symbols’ (see 1927, 66). For Russell (1956, 41), not only descriptions are incomplete symbols; so are quantified phrases like ‘a man’, ‘some man’, ‘any man’, ‘every man’, ‘all men’.

Quantified phrases are obviously incomplete symbols, but that descriptions are requires an argument, which Russell provides. If ‘the author of *Waverley*’ in ‘Scott is the author of *Waverley*’ were a logically proper name, it would denote Scott and the proposition that Scott is the author of *Waverley* would have the form ‘ $a = a$ ’. Since the meaning of a logically proper name is its denotation, it would not differ in significance from the proposition that Scott is Scott. But obviously it does. Hence, ‘the author of *Waverley*’ is not a logically proper name, that is, it does not denote Scott. ‘The author of *Waverley*’ does have a meaning in use. Hence, it must be an incomplete symbol. (See Whitehead and Russell 1927, 67 for the argument.)

Sometimes a description syntactically occupies a place in a sentence subordinate to another sentence. Such sentences are ambiguous, because we can unpack them according to Russell’s theory in either of two ways. If we take the description logically to occur in the asserted, containing sentence, it has primary occurrence, and if we take the description logically to occur in the subordinate sentence, it has secondary occurrence. When we eliminate such a description, it makes a difference whether we substitute for the description as occurring in the larger sentence or the subordinate sentence. For instance, if the occurrence of ‘the king of France’ is primary in ‘The king of France is not bald’, the sentence means that there is a unique king of France and he is not bald, and is false. ‘The king of France is not bald’, with this meaning, becomes

$(\exists x)[(y)(y \text{ is king of France} \equiv y = x) \ \& \ \sim(x \text{ is bald})]$

in the predicate calculus. If the occurrence of ‘the king of France’ is secondary, the sentence means that it is not the case that there is a unique king of France and he is bald, and is true. This interpretation of the sentence we can express in symbols as

$\sim(\exists x)[(y)(y \text{ is king of France} \equiv y = x) \ \& \ x \text{ is bald}]$ .

In the logical formulations of the two interpretations the distinction between primary and secondary occurrence of a description gets expressed as a difference between the scope of logical particles. In this case the difference in scope makes for a difference in existential import. (See Russell 1956, 52–53, and Whitehead and Russell 1927, 68–69 for the distinction between primary and secondary occurrence.)

Russell's distinction between the primary and secondary occurrence of a description enabled him to solve several logical puzzles. On Frege's theory, an assertion of 'The king of France does not exist', for instance, presupposes that the king exists but then denies it. On Russell's theory, we construe the sentence to mean that

$$\sim(\exists x)(y)(y \text{ is king of France} \equiv y = x)$$

(see Whitehead and Russell 1927, 174). On this interpretation the sentence lacks any unwanted implication or suggestion that the king of France exists.

Russell also has a solution now to the puzzle about how 'Scott is the author of *Waverley*' differs in meaning from 'Scott is Scott'. 'Scott is the author of *Waverley*' means

$$(\exists x)[(y)(y \text{ authors } Waverley \equiv y = x) \ \& \ x \text{ is Scott}],$$

which is quite different in meaning from 'Scott is Scott'.

In this section I presented Russell's theory of incomplete symbols. Russell avoided positing a realm of senses distinct from a realm of denotations. To avoid also saying that 'Scott is the author of *Waverley*' and 'Scott is Scott' express the same proposition, Russell gave descriptions a meaning in use without assigning any denotations to them. In a sentence containing a subordinate sentence Russell distinguished between a description that occurs primarily and one that occurs secondarily. And as we saw, a sentence may have different existential import depending on whether descriptions in the sentence have primary or secondary occurrence. Russell's theory of descriptions is important for us because it explains how we can seriously use nondenoting descriptions.

## 8 Referential versus Attributive Use

In this section I shall present Donnellan's distinction between the referential use and the attributive use of a description. I shall focus on the existential presuppositions of singular terms used referentially and those used attributively. I shall then apply the distinction between referential and attributive usage to other singular terms. Finally, I shall show how to specify a statement so that I can make this difference in usage explicit in section 9, "Use Made Explicit."

As Keith Donnellan first pointed out (see 1971), we use definite singular terms of one type, descriptions, in two ways: referentially and attributively. When a person uses a description referentially in a statement, he uses it to pick out a particular object about which he states something. In contrast, when a person uses a description like ‘the so-and-so’ attributively in a statement, he states something about whatever is the so-and-so (see Donnellan 1971, 198). An instance of a referential use of a description is saying ‘The man in the blue suit is drunk’ at a party. The description of the man gives information about him only to enable the audience to pick him out. Saying ‘The next president will be a conservative’ about whoever becomes the next president is an attributive use of a description.

One perhaps can better see the distinction when the same sentence contains a description that a speaker can put to either use. Donnellan’s example is ‘Smith’s murderer is insane’. Suppose an Arab by the name of ‘Ahmad Ismail’ is known to be the murderer. Jones, who is not very good at Arabic names, says ‘Smith’s murderer is insane’ because Ismail’s behavior at the trial was strange. In such a case Jones uses ‘Smith’s murderer’ referentially. But if the murderer is not yet known and Jones states what he does on the basis of how mutilated Smith’s body was, he uses the description attributively.

Both a description used referentially and one used attributively ordinarily have a denotation. Yet they relate to their denotations differently. When we refer, we seek to call attention to a *particular* individual (see Donnellan 1971, 200). The reference can succeed only if the referent exists. Hence, a referential use of a description suggests that the referent exists (see Donnellan 1971, 199).

Since the purpose of a reference is to pick out a particular individual, any device that does this will do, be it another description, a name, or a demonstrative pronoun (see Donnellan 1971, 198). To get an audience to recognize his referent a speaker has to use a singular term that enables his audience to pick the referent out, at least in the context. For this reason, when we refer to something using a description, we ordinarily use a description that is true of the referent. Thus, a referring use of a description also suggests that the description is true of the referent (see Donnellan 1971, 202–3).

Yet the referential use of a description only suggests, and does not imply, that the description is true of the referent (see Donnellan 1971, 203). Suppose that at a party Ron says to Phillip ‘The man with a screwdriver is making a pass at your wife’, only it turns out that the man has orange juice in his glass. Even though ‘the man with a screwdriver’ is not true of the

referent, it does refer to him, and if the fellow is indeed making a pass at Phillip's wife, Ron's statement is true (see Donnellan 1971, 199–200, 210).

Now, in such a case Jerry, who knows there is only orange juice in the man's glass, will not report Ron's statement using the same sentence. Rather, he will choose a more accurate way of referring to the man. And with good reason: if Jerry used the description 'the man with a screwdriver', it would be his reference, not Ron's. Jerry might correctly say 'Ron thinks that the man with a glass of orange juice is making a pass at Phil's wife'. The speaker, not the subject of a statement, is the one responsible for making singular terms used referentially in his statements pick out his referents (see Donnellan 1971, 209).

A description used attributively also suggests that the description fits something (see Donnellan 1971, 199, 200, 203). But when a speaker uses a description attributively, he is interested in whatever is the so-and-so. The description is all important, for the speaker is interested in the so-and-so only because the description fits (see Donnellan 1971, 198). The speaker need not have a particular thing in mind (see Donnellan 1971, 198).

In an assertion in which a description occurs attributively yet is true of nothing, there is nothing for the predicate to be true of. In such a case there is no true or false statement on Donnellan's view (1971, 200, 203). For instance, suppose again that Jones says 'Smith's murderer is insane' because of how mutilated Smith's body was when it was found. In such a case Jones uses 'Smith's murderer' attributively. If it should turn out that Smith was not murdered at all but had a nasty accident, there is no one to whom Jones's sentence applies. Thus, Jones fails to make a statement that is either true or false.

Yet Thompson, who knows that Smith was not murdered, may correctly report Jones's propositional attitude by saying 'Jones thinks that Smith's murderer is insane'. Because Jones used 'Smith's murderer' attributively, the description forms an integral part of Thompson's report of Jones's propositional attitude. If Thompson's report is to be accurate, he has to include 'Smith's murderer' in his sentence. But how does he avoid the suggestion that someone murdered Smith? If Thompson uses the description referentially, he presupposes that someone murdered Smith. So he is not using 'Smith's murderer' referentially. If Thompson uses 'Smith's murderer' attributively, he is saying that Jones thinks Smith's murderer, whoever he is, to be insane. Here too there is the suggestion that someone murdered Smith. Thompson thus is not using the description attributively.

When a speaker uses a description attributively, he uses it to pick out whomever the description fits. In picking out the object he is talking about, he is ascribing a property to it. He

is thus using the description predicatively. The speaker also implies with his usage that there is an object that the description fits. There are thus two aspects to an attributive usage: predication and an existential implication.

Some sentences in which terms are used predicatively lack any existential implications. An example is 'Unicorns never bite little children'. Thompson, it would seem, avoids the suggestion that Smith was murdered by using 'Smith's murderer' predicatively when he states 'Jones believes that Smith's murderer is insane'.

When the *speaker* uses a singular term attributively, he is using it, I shall say, with primary attributive force. When the speaker uses a singular term predicatively and is saying that the *subject of his statement* conceives the denotation of a singular term attributively, the speaker is using the singular term with secondary attributive force. A singular term having secondary attributive force lacks the existential implications that usually accompany the attributive use of a singular term, at least as I am using the term.

We primarily use names and demonstratives to refer. But, I hope to show, we sometimes use names and demonstratives attributively as well. The reason I seek to show this is that I want to apply the referential/attributive distinction to singular terms in general in statements about attitudes. The case I make to show that we can use demonstratives attributively is rather special. However, I cannot think of any cases in which a demonstrative occurs attributively in the attitude content of a statement about an attitude. So it does not matter so much that the case for the attributive use of demonstratives is special.

Recall Donnellan's criteria for whether a speaker uses a singular term referentially or attributively. When a person uses a singular term referentially, he has a particular thing in mind. On the other hand, if he is using a singular term attributively, he is talking about whatever the singular term applies to. These criteria suggest paraphrases for testing whether the speaker is using a singular term referentially or attributively in a statement. Suppose a speaker asserts 'Smith's murderer is insane'. If we can paraphrase his statement in an appropriate situation with a demonstrative, e.g., 'That man is insane', the speaker uses 'Smith's murderer' referentially. If we can paraphrase the speaker's statement with the locution 'Smith's murderer, whoever he is, is insane', he is using 'Smith's murderer' attributively.

Suppose someone were to state 'Pegasus does not exist'. If 'Pegasus' could occur referentially in this statement, it ought to be possible to assert 'That winged horse, Pegasus, does not exist'. But such a statement is decidedly odd. If not self-contradictory, it at least denies an obvious presupposition, namely, that there is a winged horse named Pegasus. On the other

hand, 'Pegasus, whoever he be, does not exist', though not the best English, is an acceptable paraphrase. Hence, a speaker who states 'Pegasus does not exist' must use 'Pegasus', a name, attributively.

Another example of a statement in which names occur attributively is the statement that 'Lucifer is Vesper' expresses. If both names occur referentially and the meaning of a name is just its referent, this statement is no more informative than 'That celestial body is that celestial body', said when pointing at Venus. For the statement to be informative, the speaker must use at least one of the two names attributively (see Strawson 1979a, 155). And indeed, all the following paraphrases make good sense:

'Lucifer, whatever it is, is that, Venus'; 'That, Venus, is Vesper, whatever Vesper is'; 'Lucifer, whatever Lucifer is, is Vesper, whatever Vesper is'.

People typically use names attributively also in introductions, like 'This is Gary'. 'Gary' here does not pick out the referent for the rest of the statement to say something about. 'This' does that. Indeed, 'This is he', said with no antecedent for 'he', is decidedly odd. (If 'he' refers back to an antecedent, the speaker is not using it as a demonstrative.) Hence, 'Gary' must not occur referentially here. Does it occur attributively? 'Gary' occurs attributively in 'This is the Gary I was telling you about'. This sentence is similar enough to 'This is Gary' for us to say, I think, that here too 'Gary' occurs attributively.

Even demonstratives are sometimes used attributively. An instance is Pete's use of 'that' in the following dialogue between Sara and Pete:

Sara: Look at that!

Pete: What is *that*?

If Pete had said 'What *is* that?' he would imply that he knows what 'that' refers to but does not know what it is. But with his stress on 'that', he implies that he knows not what 'that' refers to. Pete's stress indicates that he is using 'that' attributively (see Atlas, forthcoming, sec. 4). The sense of Pete's question is quite different, depending on whether he is using 'that' referentially or attributively. One might say that Pete is borrowing Sara's reference in his question, but since Pete has nothing particular in mind to which he is referring, for him the use becomes an attributive one.

It might seem counterintuitive that we sometimes use proper nouns and demonstratives attributively. After all, when a name or demonstrative is used attributively, it must have



attributive content. How might we construe names and demonstratives to have attributive content?

Names, in addition to naming an object, have a linguistic history. And sometimes this history matters in a statement, especially in a statement about a propositional attitude. ‘Lucifer’, for instance, means light bearing in Latin. Whence it became a name of the morning star. ‘Vesper’ means evening in Latin, and so came to be a name for the evening star. ‘Chomolungma’ is the Tibetan name for Mount Everest. It thus became the name for that peak when approached from the Tibetan side, especially in statements like that expressed by ‘Chomolungma is Everest’ (see *Webster’s Ninth New Collegiate Dictionary*, s.vv. ‘Lucifer’, ‘Vesper’, ‘Everest’).

In section 9, “Use Made Explicit,” I shall make Donnellan’s distinction between the referential and the attributive uses of singular terms explicit by applying Russell’s theories of descriptions and logically proper names to the distinction. Donnellan’s distinction applies to the use of singular terms in statements. Russell, in contrast, thought that designating expressions themselves denote. His theory of logically proper names and his theory of descriptions apply to expressions. Consequently, to apply Russell’s theories to Donnellan’s distinction I need a way of specifying statements. This discussion will involve distinguishing expressions from the use of expressions. So let me take up this topic first.

An expression is just a sequence of words belonging to a language. Two types of expressions of interest are singular terms and sentences. A singular term is an expression that purports to denote a single object. A sentence is an expression that purports to express a complete thought.

The trouble is that apart from the context of utterance such expressions often do not indicate their denotations. This is obviously true of indicator words (pronouns, demonstratives, verbs expressing tense) and of expressions containing indicator words. To know whether ‘He went fishing’ is true or false, we have to know whom the speaker was referring to and whether he went fishing before the utterance.

Many names and descriptions also depend on context to indicate their denotations. For instance, ‘John’ can designate a number of persons. We have to depend on the context for clues as to which one a particular use of ‘John’ refers to. ‘The book on the desk’ designates a particular book commonly in a context where a desk is close at hand.

As we saw above, a sentence often does not indicate whether a singular term it contains occur referentially or attributively. The prime example of this is ‘Smith’s murderer is insane’.

Only from the context can we know whether the speaker is using 'Smith's murderer' to pick out a particular person or whoever did the deed.

In contrast with a sentence, a statement includes features of use. Features of use include using an indicator word to indicate an object, a time, or a place and using a singular term referentially or attributively. Hence, in specifying a statement we need to specify that the speaker uses a demonstrative to designate a particular object, that he uses a verb tense to indicate a certain time span, and whether the speaker uses singular terms referentially or attributively.

In ordinary English we usually specify a statement with a 'that' clause, 'Ruth's statement that John went fishing', for example. But just as 'John went fishing' depends on context to determine a truth value, so does this specification of Ruth's statement. In neither case do the words in quotes tell us who John is or before what time he went fishing.

Quine proposes that we paraphrase statements into what he called 'eternal sentences'. Eternal sentences have truth values and take the place of propositions for Quine. The eternal sentence corresponding to any ordinary English sentence is just an expansion of the ordinary sentence so that the eternal sentence keeps the same truth value through time and from speaker to speaker (see Quine 1960, 193). If we know the circumstances of Ruth's statement, we might expand her statement thus: 'John Adams of Lone Pine, California, went fishing prior to 3:25 p.m. Pacific Standard Time 30 April 1987'. To specify a statement made with a sentence that contains a demonstrative, we substitute for the demonstrative a name or description that precisely specifies the demonstrated object.

In specifying a statement we also need to specify whether the speaker uses singular terms referentially or attributively, and if attributively, whether with primary or secondary force. Recall that if the speaker is using a singular term attributively, he is using it with primary attributive force, and if he is saying that the subject of his statement conceives the denotation of a singular term attributively, the speaker is using the singular term with secondary attributive force.

Obviously, when the speaker uses a singular term referentially, it cannot have primary attributive force, because a speaker cannot use a singular term both to pick out a particular individual and to pick out whomever the singular term fits. It also cannot have secondary attributive force, as the speaker, not the subject of a statement, is responsible for making singular terms used referentially in his statement pick out his referents.

An attributively used singular term cannot have both primary and secondary force. If Jones uses ‘Smith’s murderer’ attributively when he says ‘Smith’s murderer is insane’, the singular term ‘Smith’s murderer’ matters to Jones. To correctly report Jones’s attitude Thompson has to use ‘Smith’s murderer’ with secondary attributive force when he says ‘Jones thinks that Smith’s murderer is insane’. What singular term Thompson uses does not matter to Jones if Jones uses ‘Smith’s murderer’ referentially when he says ‘Smith’s murderer is insane’. And if Thompson uses ‘Smith’s murderer’ with primary attributive force, he implies that the singular term used to pick out Smith’s murderer does not matter to Jones.

Until I apply the apparatus of Russell’s theories of descriptions and logically proper names, I shall use the notation ‘[referential]’, ‘[attributive-1]’, ‘[attributive-2]’ placed after a singular term to indicate respectively that a singular term occurs referentially, with primary attributive force, or with secondary attributive force in a statement. Thus, a complete specification of Ruth’s statement might be ‘John Adams [referential] of Lone Pine, California, went fishing prior to 3:25 p.m. PST 30 April 1987’. I shall indicate that I am talking about a statement by using such locutions as ‘the statement “...”’ or ‘*a* states “...”’.

As we saw above, even though a speaker uses a singular term that does not apply to his referent, he may succeed in referring. If we want to specify the statement he makes in such a case, we do so without using his singular term. At a party poor old deluded Ron, for instance, says ‘The man with a screwdriver is a Marxist’, though the man is drinking only orange juice. Ron states ‘The man with orange juice [referential] at a party at such-and-such place and at such-and-such time is a Marxist’. Alternatively, if we know the man to be George Robinson of Laguna Beach, California, we could also say that Ron states ‘George Robinson [referential] of Laguna Beach, California, is a Marxist’.

Recall that the purpose of a reference is to pick out a particular individual; any device that does this will do (see the beginning of this section). Since Ron intended to refer to George with the singular term ‘the man with a screwdriver’, in specifying Ron’s statement we may use any singular term that picks George out. In other words, when a singular term occurs referentially in the attitude content of a statement about an attitude, the statement expresses a relational attributive attitude. I intend to indicate this feature of the specification of a statement with the notation ‘[referential]’. Russell’s way of stating this idea was to say that the proposition contained the object itself (see section 7, “Russell’s Theory of Incomplete Symbols”).

If a speaker uses a singular term attributively yet fails to indicate an object with the singular term even in context, he fails to make a statement. When this happens, it is impossible to specify a statement.

Sentences depend on context to express statements in a myriad of ways. I will not pretend that I can give a way of mechanically generating the specification of a statement from any sentence and its context. However, indicator words and singular terms that fail to specify their denotation precisely are two main things to take care of. We must also specify whether the speaker uses singular terms referentially or attributively.

In this section I sought to accomplish three things. I first drew the distinction between the referential use and the attributive use of a description and then showed that we use other singular terms sometimes referentially and sometimes attributively. A speaker uses a singular term referentially when he uses it solely to pick out a particular thing. In contrast, a speaker uses a singular term attributively to talk about whatever the term fits. A criterion of whether a speaker uses a singular term referentially is whether we can paraphrase his statement with a demonstrative standing in for the singular term. A criterion of whether a speaker uses a singular term attributively is whether we can paraphrase the speaker's statement with the phrase 'whatever it is' inserted after the singular term.

Then third of all, I showed how to specify a statement by expanding the references of indicator words and specifying whether the speaker uses his singular terms referentially or attributively. I showed how to specify a statement to pave the way in the next section for applying Russell's theories of descriptions and logically proper names to the specification of a statement containing singular terms used referentially or attributively.

## **9 Use Made Explicit**

In the previous section we saw that some singular terms occur referentially in a statement while others occur attributively. Russell's theory of descriptions will provide the theoretical foundation for explaining the existential presuppositions of singular terms used attributively. And I shall use Russell's theory of logically proper names to explain the existential presuppositions of singular terms used referentially. I shall then argue that since both Russell and Donnellan are interested in denotations, using Russell's theories to explicate use is a legitimate project.

In section 8, “Referential versus Attributive Use,” I stated Donnellan’s view that the attributive use of a description presumes that something fits the description. Yet in some cases the attributive use of a description does not suggest that something fits the description: the statement ‘The king of France [attributive-2] does not exist’, for example. How should we deal with such examples?

Russell provided a way with his theory of descriptions (see section 7, “Russell’s Theory of Incomplete Symbols”). Recall an example presented above. Jones says ‘Smith’s murderer is insane’ because of how mutilated Smith’s body was when it was found. But Smith was not murdered; he suffered a nasty accident. Later Thompson, aware that Smith was not murdered, correctly reports Jones’s propositional attitude by stating ‘Jones thinks at time  $t$  that Smith’s murderer [attributive-2] is insane’. ‘Smith’s murderer’ occurs attributively in Thompson’s statement yet without suggesting that Smith has a murderer. Russell would say that the description has secondary occurrence. Hence, on Russell’s theory this statement gets construed to mean that

Jones thinks that  $(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ x \text{ is insane}]$ .

Since the existential quantifier occurs within the scope of a nonfactive verb expressing an attitude, the statement does not suggest that someone murdered Smith. If the verb were factive (like ‘to know’), it would suggest that someone murdered Smith, and that he is insane (recall the discussion of factive verbs in section 2, “Propositional Attitudes”).

On the other hand, ‘Smith’s murderer’ would have primary attributive force if Thompson said ‘Jones thinks that Smith’s murderer is insane’ in these circumstances, for instance: Jones says ‘Smith’s murderer is insane’, referring to Ismail. If Thompson does not know to whom Jones is referring and makes his statement, he uses ‘Smith’s murderer’ with primary attributive force, because he is using ‘Smith’s murderer’ to pick out whoever murdered Smith. (Thompson is assuming that Jones’s use of ‘Smith’s murderer’ refers to Ismail by denoting him.) Thompson’s statement is ‘Jones thinks at time  $t$  that Smith’s murderer [attributive-1] is insane’. On Russell’s theory ‘Smith’s murderer’ has primary occurrence. Hence, Thompson’s statement means

$(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ \text{Jones thinks that } x \text{ is insane}]$ .

Because the existential quantifier occurs outside the scope of the verb expressing the attitude, the statement implies that someone murdered Smith. Russell's analysis of descriptions applies to only attributive uses of descriptions, as Donnellan says it may (1971, 204, 211).

I should give some justification here for construing an attributive use of a description in terms of existential quantification. When a speaker uses a description attributively, he uses it to pick out whomever the description fits. He is using the description predicatively, that is, in picking out the object he is talking about, he is ascribing a property to it. Russell makes this predicative use of the description explicit in his analysis by replacing the description with a predicate. The speaker also implies with his usage that there is an object that the description fits. This Russell makes explicit in his analysis with an existential quantifier.

To understand names used attributively in terms of Russell's theory of descriptions, we have to construe names predicatively. To construe 'Vesper' predicatively, for example, let us construct the predicate 'to vesper', a predicate true only of Vesper (see Quine 1961, 7–8). Then since 'Vesper' occurs attributively in the statement 'Venus [referential] is Vesper [attributive]', the statement means

$(\exists x)[(y)(y \text{ vespers} \equiv y = x) \ \& \ \text{Venus is } x]$ .

In English we ordinarily understand 'to be Vesper' predicatively, I think. Nonetheless, I constructed the predicate 'to vesper' to counter the quibble that in 'to be Vesper' we have a singular term occurring referentially.

Demonstratives normally occur referentially in statements. But should one occur attributively in a statement, applying Russell's theory of descriptions to the statement is straightforward. When we specify a statement containing a demonstrative, we substitute for the demonstrative a specifier that uniquely denotes the object demonstrated. To apply Russell's theory of descriptions, merely borrow the unique specifier. We can thus apply Russell's theory of descriptions to any singular term used attributively.

Donnellan (1971, 203–4) criticizes Russell's theory of descriptions as an account of the referential use of descriptions, but Donnellan misunderstands Russell here. Russell thought that a description denotes, or picks out something the speaker knows about but may not know by acquaintance (see 1956, 41; see also 1938, sec. 56). One can name (in the logical sense of the term) only something one knows by acquaintance (see Russell 1956, 200–201). Russell's notion of denoting more closely matches Donnellan's notion of attributive use, and his notion

of naming more closely matches Donnellan's notion of referential use. Since descriptions denote, according to Russell, his theory of descriptions is clearly not an account of the referential use of descriptions. Strawson in "On Referring" (1971, 1–27) is to blame for the common misunderstanding that Russell was discussing reference in his paper "On Denoting" (1956, 41–56).

Not only does Donnellan say that Russell's theory of descriptions may accurately describe the attributive use of descriptions, he also thinks (1971, 211) that Russell's theory of names is a fairly accurate account of the mechanics of reference. Russell held that names pick out what they name without any intervening meaning by which they do so (see 1938, 47). One consequence of his view is that the proposition associated with 'Socrates is wise', say, consists of the concept of wisdom joined to Socrates himself, a consequence that Russell accepted (1938, 45, 47; see section 7, "Russell's Theory of Incomplete Symbols," for a fuller discussion of Russell's semantics). Picturesqueness aside, what is important here is that when a speaker uses a name to refer, he uses it to pick out the referent without attributing any properties to it.

Russell thought that designating expressions denote. His theory of logically proper names and his theory of descriptions apply to expressions. Donnellan's distinction between the referential and the attributive use of singular terms applies to usage. How proper is it to apply Russell's theories of logically proper names and descriptions to Donnellan's distinction of the referential and attributive uses of singular terms? To answer this question I shall diagnose why Russell framed his theories in terms of denoting expressions and why Donnellan framed his distinction in terms of the use of expressions. This discussion will involve distinguishing expression, utterance, sense, use, and denotation, to which I turn first. I shall then argue that since both Russell and Donnellan were concerned with descriptions picking out their denotations, it is entirely proper to apply Russell's theories to Donnellan's distinction.

So, let me draw the distinctions mentioned above. An expression is just a sequence of words belonging to a language. Two types of expressions of interest are singular terms and sentences. A singular term is an expression that purports to denote a single object. A sentence is an expression that purports to express a complete thought. An utterance is the vocalizing of an expression. We can utter a sentence without asserting it, as when we read aloud from a novel.

The use of an expression to do its job involves the context of utterance when the expression contains indicator words. If we assert a sentence, we thereby use the sentence to make a statement. A sentence with a verb expressing tense is true or false depending on when it

is uttered. Yet statements are true or false absolutely, since they take into account relevant features of the context of utterance.

We use singular terms either to refer or to make an attribution. A reference is the use of a singular term to pick out an object and bring it, the object itself, to the attention of our audience. An attribution is the use of a singular term to talk about whatever the singular term applies to. Here too, a singular term containing an indicator word and many times even a name relies on the context to indicate an object. This is true whether the speaker uses the singular term referentially or attributively. A demonstrative, for example, picks out its referent only in a context where the speaker demonstrates the object or the object is sufficiently conspicuous. ‘Smith’s murderer’ picks out a particular individual (whether for referential or attributive purposes) only in a context where it is clear who Smith is.

For Frege, the sense of an expression determines a denotation (see section 3, “The Fregean Tradition”). Ordinarily, an expression expresses a sense. But if the expression contains an indicator word, we gather the sense from the expression in the context of utterance. The expression alone does not enable us to grasp the sense. For instance, to grasp the thought of a sentence containing indicator words we sometimes need to know the time or place of utterance or a gesture accompanying the utterance (see Frege 1984, 358). A thought has a definite truth value independent of context.

Frege did not recognize the referential use of a name to pick out an object without attributing any properties to it. A name picks out an object, he thought, through an associated sense. A name may determine any of several senses, depending on the sense a person associates with the name. ‘Aristotle’ may have the sense of ‘the pupil of Plato and teacher of Alexander the Great’ in the mind of one person and the sense of ‘the teacher of Alexander the Great born in Stagira’ in the mind of another (see Frege 1984, 158 n. 4, 358–59). For Frege the sense of a singular term determines a unique object as its denotation. If a singular term contains no indicator words, it alone determines a sense, whereas if it does, it and relevant features of the context of utterance determine a sense.

Russell thought that a denoting expression directly denotes its denotation, if it has one. It does not denote through the mediation of a sense. He also thought at various times that a denoting expression means what it denotes (see Russell 1938, sec. 51; Russell 1962, 103; and Whitehead and Russell 1927, 66). Sentences denote propositions (see Whitehead and Russell 1927, 66), and primarily propositions have truth values (see Russell 1938, 503). If a sentence contains a logically proper name, it denotes a proposition that contains an object. And on



Russell's view after "On Denoting" (1956, 51), if the sentence contains a description, it denotes an existentially quantified proposition. (See section 7, "Russell's Theory of Incomplete Symbols.")

In science expressions determine their denotations without depending on context (see Russell 1962, 102, and Russell 1957, 386). In ordinary language, however, sentences that contain indicator words rely on context to express a proposition. Briefly, Russell's theory of indicator words is as follows. Indicator words depend on context to indicate their denotations. An indicator word picks out its denotation, Russell thought (1962, 108), if the speaker causally connects it to its denotation. Two sentences identical except that one contains a proper name where the other contains an indicator word express the same proposition if the speaker indicates the same denotation for the indicator word. Hence, a scientific account of the world can dispense with indicator words in favor of proper names. Russell thought, it seems, that an adequate account of denoting need concern itself with only expressions and denotations.

For Donnellan a description ordinarily denotes when the speaker uses it either referentially or attributively. But we cannot determine whether the speaker uses a description referentially or attributively from his sentence alone (see Donnellan 1971, 201, 207). Since a description picks out its denotation only by being used referentially or attributively, it denotes only in the context of a statement. For Donnellan an adequate account of denoting must consider the uses of expressions.

Russell was unconcerned with context because he thought that indicator words could be eliminated. But if we think that context is relevant to the statement a sentence expresses, we ought to interpret Russell's theories of logically proper names and descriptions as applying to the use of expressions. So it is entirely proper, I think, to apply Russell's theories to Donnellan's distinction of the referential and attributive uses of singular terms, even though Donnellan's distinction relates to the use of expressions, and Russell's theories apply to just expressions.

Both Russell and Donnellan are concerned with how language relates to denotations. Because Donnellan's distinction between the referential and attributive uses of singular terms applies to usage, he does not feel a need to make the relation of his distinction to denotations explicit. But since being explicit promotes philosophical clarity, it is a virtue of Russell's theories that they make the relation of Donnellan's distinction to denotations explicit in a syntactic analysis.

In this section I made the existential presuppositions of singular terms explicit using Russell's theories. For a singular term ' $a$ ' we construct the predicate ' $A$ ' true only of  $a$ . If a statement has the form ' $F[G(a \text{ [attributive-1]})]$ ', we make its existential presuppositions explicit with

$$(\text{Ex})[(y)(Ay \equiv y = x) \ \& \ F(Gx)].$$

If a statement has the form ' $F[G(a \text{ [attributive-2]})]$ ', its existential presuppositions are given by

$$F\{(\text{Ex})[(y)(Ay \equiv y = x) \ \& \ Gx]\}.$$

And if a statement has the form ' $F[G(a \text{ [referential]})]$ ', its existential presuppositions are the same as ' $F[G(a)]$ ', in which  $a$  is a logically proper name. I then justified applying Russell's syntactic theories to Donnellan's distinctions of usage by showing that both authors are interested in the relation of language to denotations.

## 10 When Does a Term Occur Transparently?

I begin this section by considering the criteria we have for deciding when a singular term occurs transparently in an expression. This discussion will refer mainly to what Frege and Quine have said about the relation of substitution and existential generalization to transparency. I then discuss how Donnellan's distinction between referential and attributive use relates to whether or not the specification of a statement is transparent for a singular term and to whether or not we may existentially generalize or substitute a codesignating singular term.

Often suggested as criteria that a term occurs transparently in a sentence are the legitimacy of substituting terms of an identity or an equivalence and the legitimacy of existentially generalizing the position occupied by a singular term. The criteria for singular terms are whether we may legitimately substitute a codesignating singular term, that is, deduce ' $Fb$ ' from premises ' $a = b$ ' and ' $Fa$ '; and whether we may legitimately existentially generalize the position occupied by a singular term, or deduce ' $(\text{Ex})Fx$ ' from the premise ' $Fa$ '. The criterion for general terms is whether we may legitimately substitute a coextensive general term, or deduce ' $F(Ha)$ ' from premises ' $(x)(Gx \equiv Hx)$ ' and ' $F(Ga)$ '. Finally, for sentences we have the

criterion of whether we may legitimately substitute a materially equivalent sentence, that is, deduce ' $Fq$ ' from premises ' $p \equiv q$ ' and ' $Fp$ '.

Frege recognized that substituting one term with the same denotation as another leaves the truth value of a sentence unchanged when the terms have their ordinary denotations, or occur transparently (see 1984, 165). Frege (1984, 164) justified such substitution with Leibniz's law: two terms have the same denotation if and only if one can take the place of the other in any sentence without change of truth value. After all, if a sentence is about just an object, and not the manner in which the speaker designates the object, what is true of the object is true of it no matter how the speaker designates the object.

Frege also thought, however, that terms sometimes denote things other than their ordinary denotations (see 1984, 159) and if substituting a term of an identity or equivalence alters the truth value of a sentence, it is because not just the ordinary denotation of the replaced term plays a role in determining the truth value of the sentence (see 1984, 165, 176–77). Frege examined subordinate sentences to show that substitution alters the truth value when the subordinate sentence designates a thought rather than a truth value. But he suggests that his theory applies to singular terms, since they too have senses and denotations, according to Frege.

Not one to admit senses into the realm of being, Quine thinks that substitutivity fails to apply when the singular term itself, rather than its sense, plays a role in determining the truth value of the containing sentence (see 1961, 140). His example is the occurrence of 'Giorgione' in "Giorgione was so called because of his size." Though Giorgione is Barbarelli, substituting 'Barbarelli' for 'Giorgione' changes the sentence into a falsehood (see Quine 1961, 139). Frege also allowed that words sometimes denote themselves, but only in contexts of quotation (see 1984, 159, 165).

So if substituting a codesignating singular term alters the truth value of a sentence, the sentence is opaque for the singular term in question. Yet the converse is not true, as an example or two will show. '“Venus” begins with a vee' is clearly opaque for 'Venus'. Vesper is Venus. Substituting 'Vesper' for 'Venus', however, leaves the truth value unchanged. Though substitution happens in this instance to preserve the truth value of the sentence, we cannot in general substitute on the basis of an identity in this sentence. Lucifer too is Venus. Yet substituting 'Lucifer' for 'Venus' in the above sentence produces a falsehood: '“Lucifer” begins with a vee'. Substituting a codesignating singular term sometimes preserves the truth value of a sentence for fortuitous reasons.

Testing whether a sentence or the specification of a statement is transparent for a term with just one substitution may give us false results. What we have to look at is whether substituting *any* codesignating singular term preserves the truth value of the containing sentence. A sentence is transparent for a given singular term if and only if we may substitute any codesignating singular term in the sentence.

Let us switch our attention to existential generalization. Quine draws a connection between whether a singular term occurs transparently in a sentence and whether existentially generalizing the position of that singular term is legitimate. Quine's term for 'transparent' is 'purely referential'. Above in section 8, "Referential versus Attributive Use," I used the term 'referential' according to Donnellan's distinction between the referential use and the attributive use of a singular term. To avoid confusion I shall use the term 'transparent' where Quine would use the term 'purely referential'.

If the object that a singular term designates, and not the way it is designated, is all that is relevant to the truth value of a sentence, existentially generalizing the place occupied by that singular term ought to be legitimate. Whatever is true of the object that a singular term designates is true of something. Thus, according to Quine (1961, 146), if we may existentially generalize the position of a singular term, the singular term in question occurs transparently. But we can go further, I think. Existential generalization applies to a singular term if and only if the singular term occurs transparently. Perhaps Quine intended this biconditional formulation.

My reason for discussing the referential and attributive uses of singular terms in section 8, "Referential versus Attributive Use," was to lay the foundation for a discussion of how these two uses of singular terms are related to whether a singular term occurs transparently in the specification of a statement. To that discussion I now turn.

First, take the case of specifications of statements containing singular terms used referentially. As noted section 8, the speaker, not the subject of his statement, is responsible for the accuracy of his references. And when a speaker uses a singular term only to refer, its sole function is to pick out the referent. It cannot express how the subject of the statement conceives the referent. As we also saw in section 8, when the speaker uses a singular term referentially, any singular term that picks out the referent will do. So if a singular term occurs referentially in the specification of a statement, we may legitimately substitute any codesignating singular term for the original singular term. Consequently, whenever the speaker uses a singular term solely to refer, it occurs transparently in the specification of his statement. This is true even when the

predicate contains an attitude verb or other opaque operator. If a speaker uses a singular term referentially in a statement about an attitude, he asserts a relational attributive attitude.

There remains the question of whether a speaker can use a singular term referentially and attributively at the same time. I shall take up this question after discussing singular terms used attributively.

In section 7, “Russell’s Theory of Incomplete Symbols,” we saw that if a description occurs in a sentence subordinate to another sentence, when we unpack the description according to Russell’s theory of descriptions, we can do it in either of two ways. If we take the description logically to occur in the containing sentence, we eliminate the description and give the existential quantifier outermost scope. If we take the description logically to occur in the subordinate sentence, we eliminate the description and give the existential quantifier a scope that includes only that subordinate sentence. Then in section 9, “Use Made Explicit,” I applied Russell’s theory of descriptions to the attributive use of singular terms, as described by Donnellan. Thus, when a person uses a singular term like ‘the so-and-so’ attributively in a statement of a propositional attitude, he may be stating something about whatever is the so-and-so or he may be imputing such a conception to the subject of his statement. He is using the singular term with primary attributive force in the former case and with secondary attributive force in the latter.

I shall call such a conception of an object ‘an attributive conception of the object’. An attributive conception of an object is about an object rather than of it in all its particularity, since the conceiver may not know what his conception applies to. To be precise I would prefer to write ‘an attributive conception about an object’ but English idiom forbids such wording.

Let us return to an example given above. Jones says ‘Smith’s murderer is insane’. Thompson hears Jones’s statement and reports Jones’s belief by saying ‘Jones thinks that Smith’s murderer is insane’. There are four possibilities to consider. Jones may be using ‘Smith’s murderer’ either referentially or attributively in his statement, and Thompson may be using ‘Smith’s murderer’ either referentially or attributively in his statement. How does Thompson’s usage relate to Jones’s?

One possibility is that both Jones and Thompson are using ‘Smith’s murderer’ referentially. Since Jones is using ‘Smith’s murderer’ referentially, he is using it solely to pick out Ahmad Ismail. Any singular term that does this will allow Jones to say what he wants to say. Jones’s attitude is relational. Since Thompson too is using ‘Smith’s murderer’ referentially, the logical form of his statement is ‘Jones thinks that *a* is insane’. The logically proper name occurs

transparently in the specification of Thompson's statement, so Thompson is ascribing a relational attributive attitude to Jones.

If Jones fails to refer to someone with 'Smith's murderer' or refers to someone other than he intended, and Thompson knows this, then Thompson is using 'Smith's murderer' irresponsibly. Remember:

Thompson is responsible for the reference in his statement 'Jones thinks that Smith's murderer is insane', not Jones. If Thompson ends up referring to no one, he fails to make a statement; if Thompson refers to someone other than Jones intended to, Thompson's statement is false.

Another possibility is that both Jones and Thompson are using 'Smith's murderer' attributively. Jones is now using 'Smith's murderer' attributively to say something about whoever murdered Smith. Jones may not know exactly who murdered Smith. But even if he knows, he does not care that it was Ahmad Ismail, for he wants to say something about whoever did the deed. Jones's attitude is notional. Thompson too is using 'Smith's murderer' attributively. He imputes an attributive conception of Smith's murderer to Jones, since Jones's attribution forms an integral part of his propositional attitude. Hence, 'Smith's murderer' has secondary attributive force in Thompson's statement. The logical form of Thompson's statement is

Jones thinks that  $(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ x \text{ is insane}]$ .

Suppose that Jones's attributive use of 'Smith's murderer' fails to apply to a unique individual, either because Smith was not murdered or because a gang of thugs murdered Smith. Even so, Thompson makes a true statement. He is not committed to the presuppositions of Jones's attributive conception, because he imputed that conception to Jones in his statement. Nor is he committed to the truth of Jones's statement, since he used a nonfactive attitude verb.

A third possibility is that Jones is using 'Smith's murderer' referentially and Thompson is using 'Smith's murderer' attributively. Here too Jones is using 'Smith's murderer' solely to pick out Ahmad Ismail. Any singular term that does this will do for Jones. Since Jones's attitude is relational, Thompson may accurately specify Jones's attitude by using Ismail's name referentially, by pointing to Ismail, or by assuming that Jones used 'Smith's murderer' accurately and borrowing the singular term. In the last case Thompson is using 'Smith's murderer' to apply to whomever it fits and hence with primary attributive force. The logical form of his statement is

$(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ \text{Jones thinks that } x \text{ is insane}]$ .

In the normal case when Jones uses ‘Smith’s murderer’ referentially, the singular term applies to Jones’s referent. If Jones fails to refer to anyone with his utterance of ‘Smith’s murderer’ because the singular term does not apply to anyone, Thompson’s attributive use of ‘Smith’s murderer’ fails to apply to anyone, so his statement is false.

Suppose that by the conventions of reference Jones refers with his use of ‘Smith’s murderer’ to someone other than he intended: Abdul Ismail, Ahmad’s brother, say. Thompson’s statement is again false, because Jones does not *think* that Smith’s murderer (Abdul) is insane, although Jones did *say* that Smith’s murderer (Abdul) is insane.

A fourth possibility is that Jones is using ‘Smith’s murderer’ attributively and Thompson is using ‘Smith’s murderer’ referentially. Again, Jones is using ‘Smith’s murderer’ attributively to say something about whoever murdered Smith. He may not know who murdered Smith. But even if Jones knows that it was Ahmad Ismail, he does not care, for he wants to say something about whoever did Smith in. The attribution forms an integral part of Jones’s notional propositional attitude. The logical form of Jones’s statement is

$(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ x \text{ is insane}]$ .

But since Thompson is using ‘Smith’s murderer’ to refer, he uses it only to pick out his referent; its attributive content does not matter and may even be not true of the referent (see Donnellan 1971, 198, 201). The logical form of Thompson’s statement is ‘Jones thinks that *a* is insane’. The specification of Thompson’s statement is transparent for ‘*a*’. Thompson’s statement thus ascribes a relational attributive attitude to Jones, whereas in fact Jones holds a notional propositional attitude. Hence, Thompson’s statement is false, unless Jones holds both an attributive attitude and a propositional attitude.

Let us return to the question that arose above. When we make a statement, can we use a singular term both referentially and attributively with secondary force at the same time or attributively with both primary and secondary force at the same time? Strawson uncritically asserts that both dual uses of singular terms are possible (see 1979a, 158); I shall argue that they are not.

First, can a speaker use a singular term referentially and attributively at the same time? The referential use implies that the speaker has a particular thing in mind. The attributive use implies the speaker is interested in whatever fits the description. The speaker may not even know what he has in mind beyond what the description tells us. If someone uses a singular term to refer to a particular individual, he cannot be using it to talk about whatever the singular term fits, and vice versa. When Jones asserts ‘Smith’s murderer is insane’, either he means someone in particular by ‘Smith’s murderer’, or he does not. If he does, he is using the singular term referentially; if not, he is using the singular term attributively. Hence, if a person uses a singular term referentially, he cannot be using it attributively, and if he uses it attributively, he cannot be using it referentially. Since a speaker cannot use a singular term referentially and attributively at the same time, he cannot, it follows, use a singular term both referentially and with secondary attributive force at the same time.

Next, can a speaker use a singular term with both primary attributive force and secondary attributive force at the same time? When a speaker uses a singular term attributively in a statement of an attitude, he may either vouch that substituting a codesignating singular term and existential generalization apply to that singular term in the specification of his statement or not. If he does, the speaker is giving his attributive conception of the denotation of the singular term. Hence, the singular term in question has primary force. If he does not, the speaker is giving the attributive conception of the subject of his statement rather than his own.

The singular term has secondary force. It cannot have both primary and secondary force.

To view the matter from a different angle, when a speaker uses a singular term attributively in a statement of an attitude, either he may impute an attributive conception of the denotation of the singular term to the subject of his statement and disclaim any responsibility for whether substituting a codesignating singular term and existential generalization apply to that singular term or he may not. If he does, the singular term in question has secondary force. If he does not, the singular term has primary force. Again, it cannot have both primary and secondary force.

If a singular term has attributive force in a statement, when may we substitute a codesignating singular term or existentially generalize in the specification of the statement?

According to logical theory, we may existentially generalize or substitute on the basis of an identity only when we are dealing with a logically proper name, or in terms of usage, only when a singular term occurs referentially. But Whitehead and Russell prove analogues to substitution based on identity for descriptions (see 1927, theorems \*14.16 and \*14.15), and the analogue to existential generalization is obvious. These analogues apply, of course, only when



the description has primary occurrence. These analogues enable us to simulate existential generalization and substitution of codesignating logically proper names in the specification of a statement, when a singular term has primary attributive force.

The analogue for existential generalization allows us to say: if a singular term occurs with primary attributive force in a statement, we may existentially generalize the position occupied by that singular term in the specification of the statement. In symbols the analogue for existential generalization is

$$(Ex)[(y)(Gy \equiv y = x) \ \& \ Fx] \supset (Ex)Fx.$$

On the basis of one analogue for substitution we can say: if a singular term occurs with primary attributive force in a statement, we may substitute a codesignating singular term in the specification of the statement, provided we understand the substituted singular term to have primary attributive force. Symbolically expressed, this analogue for substitution is

$$(Ex)[(y)(Gy \equiv y = x) \ \& \ Fx] \ \& \ (Ex,y)[(z)(Gz \equiv z = x) \ \& \ (z)(Hz \equiv z = y) \ \& \ x = y] \\ \supset (Ex)[(y)(Hy \equiv y = x) \ \& \ Fx].$$

Whitehead and Russell also prove an analogue for substitution that enables us to say: if a singular term occurs with primary attributive force in a statement, we may substitute a codesignating singular term in the specification of the statement and understand it to have referential force. In symbols the analogue is

$$(Ex)[(y)(Gy \equiv y = x) \ \& \ Fx] \ \& \ (Ex)[(y)(Gy \equiv y = x) \ \& \ a = x] \supset Fa.$$

These analogues show that singular terms occurring with primary attributive force in the specification of a statement behave like logically proper names under existential generalization and substitution based on identity.

Let us turn to the case of when a singular term occurs opaquely in the specification of a statement to see whether we may legitimately existentially generalize or substitute a codesignating singular term. Suppose Thompson uses ‘Smith’s murderer’ with secondary attributive force when he states ‘Jones thinks that Smith’s murderer is insane’. His statement has the logical form

Jones thinks that  $(\exists x)[(y)(y \text{ murders Smith} \equiv y = x) \ \& \ x \text{ is insane}]$ .

Existential generalization and substitution based on identity do not apply to the specification of a statement with this logical form, for the singular term ‘Smith’s murderer’ has disappeared. A singular term with primary attributive force also disappears when analyzed according to Russell’s theory of descriptions. But for singular terms with primary attributive force Whitehead and Russell give us theorems that allow us to simulate existential generalization and substitution based on identity. We have no such theorems for singular terms that have secondary attributive force, even when we apply the extensional logic of *Principia Mathematica* to sentences about propositional attitudes. Thus, if a singular term occurs with secondary attributive force in a statement of a propositional attitude, we have no basis for existentially generalizing or substituting a codesignating singular term in the specification of the statement.

Suppose that on the basis of the identity ‘Smith’s murderer is Ahmad Ismail’ we go ahead and substitute anyway. What we get is ‘Jones thinks that Ahmad Ismail is insane’. Thompson in his statement asserts that Jones conceives ‘Smith’s murderer’ attributively to mean whoever murdered Smith. Jones may not think that Ahmad Ismail is insane or even that whoever is Ahmad Ismail is insane. The resulting statement thus ascribes a different propositional attitude to Jones than Thompson’s original statement does.

We may substitute or existentially generalize when the singular term has primary force, because then the *speaker* is using the singular term attributively, and hence it occurs transparently. But if the speaker in his statement imputes an attributive conception of an object to the subject of his statement, he no longer guarantees that the logic of substitution applies or that the singular term has its normal existential implications.

What I have shown is that we may legitimately existentially generalize or substitute any codesignating singular term in the specification of a statement when and only when a singular term occurs referentially or with primary attributive force, even if it occurs in a clause subordinate to a verb expressing an attitude. But note that these are also just the cases when a statement of an attitude expresses a relational attributive attitude (see the exposition above on how Thompson’s usage relates to Jones’s).

To summarize the discussion thus far in this section, the specification of a statement is transparent for a singular term if and only if substituting any codesignating singular term leaves

the truth value of the statement unchanged. Alternatively, the specification of a statement is transparent for a singular term if and only if we may legitimately existentially generalize the position of the singular term. In terms of usage, a singular term occurs transparently in the specification of a statement just in case the speaker uses it referentially or with primary attributive force. It occurs opaquely just in case the speaker uses it with secondary attributive force.

Singular terms thus divide logically between those used referentially or with primary attributive force on the one hand and those used with secondary attributive force on the other. Substitutions must preserve this cleavage, of course. That is, a referential use may not become a secondary attributive use, and vice versa. And a primary attributive occurrence must not become a secondary attributive occurrence, and vice versa.

Singular terms are not the only terms that can occur opaquely in the specification of a statement of an attitude. General terms and subordinate sentences too can occur opaquely in the specification of such statements. I now turn to briefly consider criteria of when such expressions occur opaquely. I am brief because these criteria are uncontroversial.

The criterion for whether a general term occurs transparently in the specification of a statement is: the specification of a statement is transparent for a given general term if and only if we can substitute any coextensive general term without changing the truth value of the statement (see Quine 1960, 151). If a general term helps determine the truth value of the containing statement only by its extension (the set of objects of which it is true), the specification of the statement is transparent for the general term and we can substitute a coextensive general term without changing the truth value of the statement.

The criterion for whether a subordinate sentence occurs transparently in the specification of a statement is: the specification of a statement is transparent for a given subordinate sentence if and only if we can substitute any materially equivalent sentence without changing the truth value of the statement (see Quine 1960, 151). If a subordinate sentence helps determine the truth value of the statement only by its extension (its truth value), the specification of the statement is transparent for the subordinate sentence and we can substitute a materially equivalent sentence without changing the truth value of the statement.

As with singular terms, we are concerned not just with whether a particular substitution happens to leave the truth value of the statement unchanged, but with whether substituting any coextensive general term, or any materially equivalent sentence, leaves the statement unchanged in truth value.

Substitution based on equivalences serves as a criterion for whether a general term or a subordinate sentence occurs transparently, but we lack such a criterion involving existential generalization. In ordinary discourse we usually do not quantify over the extensions of general terms (sets) and sentences (truth values). We can and do, of course, make good use of quantifying over sets in set theory, and the propositional calculus involves at least implicit quantification over truth values. However, when we make a statement in ordinary discourse in the specification of which a quantified variable takes the place of a general term or a subordinate sentence, such statements usually, if not always, involve higher-order quantification.

For instance, one sometimes hears a person assert something like ‘Jane knows something about Paul, but she won’t tell anyone’. Truth values obviously cannot be about Paul, but propositions can. Then there are sentences like ‘I wanted to do something but forgot what it was’. The things people want to do are not sets but actions; otherwise, wanting to kill a devil would be the same as wanting to kill an angel. ‘Something’ here is a quantification over actions. Since quantification in ordinary discourse is not, or not always, over sets and truth values, the legitimacy of such quantification cannot tell us whether a general term or subordinate sentence occurs in the specification of a statement extensionally, that is, transparently.

To summarize the discussion toward the end of this section, the specification of a statement is transparent for a general term just in case substituting any coextensive general term leaves the truth value of the statement unchanged. The specification of a statement is transparent for a subordinate sentence if and only if substituting any materially equivalent sentence leaves the truth value of the statement unchanged.

An important result of this section is the demarcation of whether a singular term is transparent or opaque in the specification of a statement in terms of how the speaker uses the singular term in his statement. To repeat, a singular term occurs transparently in the specification of a statement just in case the speaker uses it referentially or with primary attributive force. It occurs opaquely just in case the speaker uses it with secondary attributive force.

## Ambiguity of Denotation and Opacity

### 11 Frege's Theory of Opacity

In this section I shall present Frege's theory of opacity, largely as a contrast to Russell's theory of opacity (see section 13, "Incomplete Symbols and Opacity," and section 14, "The Need for Intensional Entities"). Frege, as we shall see, maintains that if a term occurs opaquely in a sentence, the term denotes something other than its ordinary denotation. This move allows Frege to maintain that in scientific discourse substituting a codenoting term for a term in an expression preserves the denotation of the expression.

In section 3, "The Fregean Tradition," we saw that when a person makes a statement, each significant part of the sentence he uses has both a sense and a denotation. A proper name denotes an object; a concept word denotes a concept (which for Frege is a function from objects to truth values); and a sentence denotes a truth value. Frege presents an argument that sentences denote truth values (see 1984, 162–64). The argument is interesting in that it reveals Frege's reasons for choosing the semantics he advocates.

A sentence like 'The sun shines on the morning star' presents a thought. Are we to regard this thought as its sense or its denotation? Frege assumes that if in an expression we substitute for a term another with the same denotation, the denotation of the whole expression remains the same. Similarly, if in an expression we substitute for a term a synonymous term, the sense of the entire expression remains unchanged. So let us substitute in the above sentence a term that has the same denotation but a different sense and see what happens. 'The evening star', like 'the morning star', denotes Venus, yet the two terms are not synonymous. When we make the substitution, we get 'The sun shines on the evening star', which has the same truth value but expresses a different thought. Hence, a sentence denotes a truth value and expresses a thought as its sense.

We can generalize Frege's argument as follows. Let  $p$  and  $q$  be any two true propositions that express different thoughts, and let us write ' $(\text{the } x)(Fx)$ ' for 'the  $F$ '. Then

' $(\text{the } x)(x = 0 \ \& \ p)$ '    and    ' $(\text{the } x)(x = 0 \ \& \ q)$ '

both denote 0 but differ in sense. Again let us assume that substituting codenoting terms preserves the denotation of the containing expression and substituting synonymous terms preserves the sense. Then

‘(the  $x$ )( $x = 0 \ \& \ p$ ) = 0’    and    ‘(the  $x$ )( $x = 0 \ \& \ q$ ) = 0’

will codenote but differ in sense. The only thing that these two expressions agree in is truth value. Hence, they must both denote the truth value true. Yet the two expressions differ in sense and in thought. So we might reasonably identify the thought with the sense of these sentences.

The reason that substituting codenoting terms preserves the denotation of the containing expression is that Frege conceived denotations to be only what determines the truth value of a sentence. Proper names denote objects, predicates denote functions from objects to truth values, and sentences denote truth values. An atomic sentence, one composed of a proper name joined to a predicate, is true in Frege’s semantics if and only if the concept denoted by the predicate maps the object denoted by the proper name to the truth value true.

But also, substituting synonymous terms preserves the sense of the containing expression. The reason this principle holds is a bit more complicated. Frege conceived the sense of an expression to be just a mode of determining the denotation (see 1984, 158–59). Thus, the sense of an expression determines its denotation. Since an atomic sentence is true if and only if the concept denoted by the predicate maps the object denoted by the proper name to the truth value true, for an atomic sentence the mode of determining the object and the mode of determining the concept completely determine the mode of determining the truth value (a thought). Synonymous terms express the same sense, or mode of determining a denotation. Hence, substituting a synonymous term in a sentence leaves the sense of the sentence unchanged.

Containing expressions express senses other than thoughts and denote things other than truth values, but extending the above arguments in these directions is rather straightforward.

For Frege (1984, 163) science is concerned with truth and is objective. Knowledge consists of an association of thoughts with truth values. A judgement is an advance from a thought to a truth value (see Frege 1984, 164–65, 391 n. 19).

On the other hand, when we entertain ourselves with literature (novels, drama, poetry, and the like), we care not about denotations. Rather we are interested in the senses of expressions and the ideas and feelings associated with these senses (see Frege 1984, 161, 163). The coloring of an expression is that part of its content that does not determine the denotation. It is

the ideas and feelings that people associate with the sense of the expression (see Frege 1979, 198). In literature we are interested in the color of expressions. Since associations of ideas depend on past experience and vary from person to person, literature is subjective (see Frege 1984, 161, 163).

Science is concerned with the sense and denotation of an expression; literature is concerned with the sense and coloring of an expression. Hence, the above principles (substituting codenoting terms preserves the denotation of the containing expression and substituting synonymous terms preserves the sense) are true for scientific discourse but not for literary discourse.

The question of truth arises for sentences expressing propositional attitudes, yet Frege's principles of substitution seem not to hold on superficial application. For example, suppose that 'Millie believes that Everest is the highest peak in the world' expresses a true thought. Now it so happens that Everest is Chomolungma, and that the only mountain taller than 29,000 feet is the highest peak in the world, and that Everest is the highest peak in the world if and only if Katmandu is the capital of Nepal. Yet Millie does not believe that Chomolungma is the highest peak in the world, nor that Everest is the only mountain taller than 29,000 feet, nor that Katmandu is the capital of Nepal. About all these things Millie is ignorant. Hence, the following sentences are all false: 'Millie believes that Chomolungma is the highest peak in the world', 'Millie believes that Everest is the only mountain taller than 29,000 feet', 'Millie believes that Katmandu is the capital of Nepal'.

The reason that the indicated substitutions do not hold, according to Frege, is that in the original quoted sentence 'Everest', 'is the highest peak in the world', and 'Everest is the highest peak in the world' denote not their ordinary denotations but their senses. That is, 'Everest' denotes a mode of determining Everest, not Everest; 'is the highest peak in the world' denotes a mode of determining a function that maps Everest to the true, not the function itself; and 'Everest is the highest peak in the world' denotes the thought thereby expressed, not the truth value true.

When substituting a codesignating term converts a truth into a falsehood, it may be because the replaced term denotes its sense, but it may also denote both its ordinary denotation and its sense at the same time, or it may denote itself. Frege's example of a sentence in which a subordinate sentence denotes both a truth value and a thought is a counterfactual: "Babel fancies that the return of Alsace-Lorraine would appease France's desire for revenge" (1984, 175). Terms denote both their ordinary denotation and their senses also in factive sentences,

Frege would hold. In a sentence in which words are quoted, the words in quotes denote themselves, Frege notes (1984, 159, 165). All this we saw in section 3, “The Fregean Tradition.”

Frege makes this maneuver of changing the subject of sentences of propositional attitudes and direct discourse so as to be able to continue to maintain that sentences are about the denotations of their terms. So, according to theory, we can expect that where there is a change of denotation, substitutions based on identities of sense or of expression will preserve the truth value of the containing sentence.

Frege’s theory of opacity involves positing abstract entities. A term in an intensional context denotes an abstract entity, like a sense or an expression. (Expressions are abstract entities because we are talking about expression types, rather than expression tokens.) If every time substitution fails to apply, we attribute the failure to a change of denotation and leave matters thus, we are making Frege’s theory of opacity into an ad hoc explanation of opacity. But if we also provide an identity on the basis of which substitution applies, we show what the replaced term denotes in the intensional context in question. It denotes the abstract entity indicated in the identity.

For example, ‘Millie believes that Everest is the highest peak in the world’ does not imply ‘Millie believes that Everest is the only mountain taller than 29,000 feet’, even though the highest peak in the world is the only mountain taller than 29,000 feet. Yet it does imply ‘Millie believes that Everest is the tallest mountain on earth’, because ‘the highest peak in the world’ is synonymous with ‘the tallest mountain on earth’. Therefore, ‘the highest peak in the world’ denotes its sense in this context.

I intentionally avoided giving an example involving singular terms, or proper names in Frege’s terminology. Frege’s theory is a theory about the logic of *expressions*. Hence, it must ignore subtleties involving the *use* of expressions, like the referential/attributive distinction, unless these are explicitly paraphrased. Yet as we saw in section 10, “When Does a Term Occur Transparently?” use affects the logic of singular terms in statements of propositional attitudes. It is impossible, I hold, to understand the logic of a singular term in a sentence expressing a propositional attitude apart from how the speaker uses the sentence in a context. This point figures centrally in this essay.

Proper names, like other expressions, have senses, Frege thought (1984, 158 n. 4, 358–59). Proper names can pick out objects only through their properties. People may associate different senses with the same proper name, but a person must associate some sense with every proper



name he uses. Since for Frege proper names pick out objects by attributing some property to them, they function only attributively in a sentence and cannot function referentially therein.

Frege wrote nothing about sentences expressing relational attributive attitudes. But we can amend Frege's theory of opacity to accommodate sentences expressing relational attributive attitudes. The amendment is simple. Proper names occurring in clauses subordinate to attitude verbs in sentences expressing relational attributive attitudes denote their ordinary denotations. And since proper names always have senses, proper names occurring in the attitude content of sentences expressing notional propositional attitudes denote their senses.

To summarize this section, Frege holds an extensional semantics for extensional language. A proper name denotes an object; a concept word denotes a function from objects to truth values; and a sentence denotes a truth value. This contrasts with Russell's position. Russell holds that predicates and sentences denote intensional entities (propositional functions and propositions, respectively) even when the language is extensional. Frege's theory is ontologically pleasing in that the entities it posits are extensional. That is, they are either publicly observable objects or abstract entities (functions and truth values) tied closely enough to publicly observable objects so as to be readily determinable. Yet to accommodate sentences expressing propositional attitudes Frege maintained that a term in the attitude content of such a sentence denotes its sense rather than its denotation. So, substituting a synonymous term for that term should preserve the truth value of the containing sentence.

## **12 Quine's Behavioral Understanding of Attitudes**

In this section I shall present Quine's theories of sentences about attitudes. I present Quine's theories because of the underlying influence they have had on my thinking, an influence that no doubt has shown itself here and there in this essay. A theme that pervades Quine's thought is his behaviorism. Lack of behavioral criteria for individuating senses leads Quine to deny ontological status to senses. And when Quine tries to give the truth conditions of sentences about attitudes, he does so in behavioral terms. But as we shall see, a behavioral understanding of sentences about attitudes achieves only limited success.

In section 4, "Quine on Attitudes," I already presented Quine's way of construing sentences about attitudes to be about senses (a position he later rejects). Briefly to review, let '[Cicero denounced Catiline]' denote the proposition that Cicero denounced Catiline. The sentence 'Tom believes that Cicero denounced Catiline' then means that Tom believes [Cicero

denounced Catiline]. Let ‘ $x[x \text{ denounced Catiline}]$ ’ denote the attribute of denouncing Catiline. The sentence ‘Tom believes Cicero to have denounced Catiline’ means that Tom believes  $x[x \text{ denounced Catiline}]$  of Cicero.

‘Tom believes [Cicero denounced Catiline]’ is opaque for the terms within the brackets. Because ‘Cicero’ occurs opaquely, we cannot properly substitute ‘Tully’ for ‘Cicero’ in the sentence, even though Cicero was Tully. Nor can we properly existentially generalize the position ‘Cicero’ occupies and give the quantifier ‘(Ex)’ outermost scope (see Quine 1960, 166–67). In Quine’s canonical language it is easy to see the reason why. ‘[Cicero denounced Catiline]’ is a singular term and denotes a proposition. ‘Cicero’ is only an accidental part of this singular term, much like the ‘line’ in ‘Catiline’ (see Quine 1976, 161–62).

On the other hand, ‘Cicero’ occurs transparently in ‘Tom believes  $x[x \text{ denounced Catiline}]$  of Cicero’. That is, ‘Cicero’ contributes to the truth value of this sentence only by what it denotes: Cicero. Hence, we can legitimately substitute ‘Tully’ for ‘Cicero’, because Cicero was Tully, and we can legitimately existentially generalize the position of ‘Cicero’.

We can properly substitute a codesignating singular term and existentially generalize only when the contribution the singular term makes to the truth value of a sentence depends just on its customary denotation. When a singular term denotes its ordinary denotation, pure and simple, it has what Quine calls ‘purely referential occurrence’ (1961, 140) and what Kaplan calls ‘vulgar occurrence’ (1975, 206).

Let me turn now to Quine’s treatment of singular terms. Because ‘Pegasus’ does not denote, ‘Pegasus flies’ is neither true nor false. We can accommodate such sentences in a logic of three truth values: true, false, and neither true nor false. But we cannot simply regard such sentences as false, for among the false sentences are none of their negations, while among the neither true nor false sentences are all of their negations. Quine, however, finds a three-valued logic an irksome complication that promises no gain in understanding (see 1960, 177).

Rather than complicate logic by allowing for three truth values, Quine proposes to construe singular terms except variables as predicates. His technique is one we have encountered before (see section 9, “Use Made Explicit”). To construe ‘Pegasus’, for example, as a predicate, construct the predicate ‘to pegasus’, true of nothing, since Pegasus does not exist (see Quine 1961, 7–8). ‘Pegasus flies’ then gets translated into Quine’s canonical language as

‘ $(Ex)[(y)(y \text{ pegasuses} \equiv y = x) \ \& \ x \text{ flies}]$ ’,

which is false.

Let 'A' be a predicate true only of 'a'. In a logic in which all singular terms denote,

$$Fa \equiv (Ex)(Ax \ \& \ Fx).$$

But 'Pegasus flies' is neither true or false, whereas its translation in the canonical language is false. So we cannot claim that the paraphrase is synonymous with the original sentence. Quine, however, does not understand his paraphrases of ordinary-language sentences to be synonymous with the originals (see 1960, 159, 182). The purpose of a paraphrase into a canonical language is to better serve the purposes of the original, in this case by avoiding truth-value gaps. We want to avoid truth-value gaps because in a logic of two truth values a sentence that is neither true nor false expresses no proposition.

At this stage of Quine's argument propositions serve two purposes: they are the vehicles of the truth values, and they are the objects of the propositional attitudes. Quine states that we are to construe singular terms as predicates even in sentences about attitudes. We are to paraphrase 'Homer believed that Pegasus exists', for instance, as 'Homer believed [(Ex)(x pegasususes)]' (see Quine 1960, 179).

Of course, sentences about propositional attitudes and those about attributive attitudes receive different paraphrases. Let 'to hector' be a predicate true only of Hector. 'Homer thought Hector to be a mighty warrior' becomes

$$'(Ex)(x \text{ hectors} \ \& \ \text{Homer thought } y[y \text{ was a mighty warrior}] \text{ of } x)'$$

in canonical form, and 'Homer thought that Hector was a mighty warrior' becomes

$$'Homer \text{ thought } [(Ex)(x \text{ hectors} \ \& \ x \text{ was a mighty warrior})]'$$

Quine thus analyzes singular terms even though they fall within the attitude content of a sentence about an attitude. Quine is bold here, because he does not claim that the analysandum and analysans are synonymous. Indeed, if Hector never existed, 'Homer thought Hector to be a mighty warrior' lacks a truth value, whereas

$$'(Ex)(x \text{ hectors} \ \& \ \text{Homer thought } y[y \text{ was a mighty warrior}] \text{ of } x)'$$

is false. Yet we must formulate propositions with closed eternal sentences and attributes with open eternal sentences. If we are to have propositions and attributes as the objects of attitudes, we have to avoid truth-value gaps and thus must so interpret singular terms in the attitude content of a sentence about an attitude.

If a sentence about an attitude contains indicator words, we also have to spell out the references to indicate what proposition or attribute the attitude is about. To explicitly specify a proposition we thus need to formulate the proposition in an eternal sentence: a sentence whose truth value stays the same in different contexts of utterance (see Quine 1960, 193). ‘Tom believes that the door is open’, for instance, depends on time and circumstance of utterance to indicate what door Tom believes is open and when. Hence, to make ‘the door is open’ into an eternal sentence that specifies a proposition, we must use our knowledge of time and circumstance of utterance to specify what door Tom has in mind and when he thinks it open.

We have already encountered the need to specify the references of indicator words when specifying what a speaker states with a sentence (see section 8, “Referential versus Attributive Use”). Quine handles singular terms differently: he applies Russell’s theory of descriptions to all singular terms, whereas I apply Russell’s theory of descriptions only to singular terms used attributively. But otherwise Quine’s paraphrasing an ordinary English sentence into an eternal sentence is like specifying the statement a speaker makes with that ordinary English sentence.

In section 4, “Quine on Attitudes,” we followed at length Quine’s argument against positing intensional entities: propositions, attributes, and the like. His argument, briefly, is this. We are justified in positing an abstract entity only if we can formulate identity conditions for the entity. The identity conditions for propositions and one-place attributes are:  $[p] = [q]$  if and only if ‘ $p \equiv q$ ’ is analytically true, and  $x[Fx] = x[Gx]$  if and only if ‘ $(x)(Fx \equiv Gx)$ ’ is analytically true. The identity conditions thus depend on the notion of analyticity. We can define ‘analytically true’ in terms of meaning or synonymy, but all such notions are interdependent.

What Quine requires of a definition of ‘analytic’ is a rough characterization of what it is for an eternal sentence to be analytically true in terms of dispositions to verbal behavior (see 1960, 207). But we can behaviorally differentiate *eternal* sentences no further than distinguishing the true ones from the false ones, as an eternal sentence always draws the same affirmative or negative response, if not a response of ‘I don’t know’. Because we specify propositions with eternal sentences, we cannot behaviorally differentiate propositions more finely than truth values. We specify propositions with closed eternal sentences and attributes

with open eternal sentences. Since we can behaviorally differentiate open eternal sentences no finer than sets, we can behaviorally differentiate attributes no finer than sets. Behavioral means thus do not adequately individuate propositions and attributes. So we are unjustified in positing them. (This is not how Quine argues, but it is a consequence of what he writes.)

If we are unjustified in positing intensional entities, we have to find other objects for the so-called propositional and attributive attitudes. We could construe sentences about attitudes to be about expressions. That is, we could construe propositional attitudes to be sentential attitudes and attributive attitudes to be predicate attitudes. We would then construe ‘Homer thought Hector to be a mighty warrior’, for instance, to mean

$(\exists x)(x \text{ hectors} \ \& \ \text{Homer thought ‘} y \text{ was a mighty warrior’ of } x),$

and ‘Homer thought that Hector was a mighty warrior’ to mean

Homer thought ‘ $(\exists x)(x \text{ hectors} \ \& \ x \text{ was a mighty warrior})$ ’.

Quine thus has expressions fill the role of senses in the theory of attitudes as traditionally conceived. Terms in intensional contexts denote themselves.

Quine takes the position that terms in intensional contexts denote themselves in “Quantifiers and Propositional Attitudes” (1976, 194–96) and again in “Intensions Revisited” (1981, 118–19). He considers this position in *Word and Object* (1960, 211–13), but an argument of Church’s (1971a) persuades him to reject the idea.

Church argued against construing sentences about attitudes to be about expressions (see 1971a). I presented his argument in section 3, “The Fregean Tradition.” To review, analysis and translation both ought to preserve meaning. Yet translating ‘Homer thought that Hector was a mighty warrior’ into German and applying Quine’s analysis to the German produces a result different from analyzing the sentence first and then translating it. The former route produces

„Homer dachte „ $(\exists x)(x \text{ hektoriert} \ \& \ x \text{ ein mächtiger Krieger war})$ ” ’.

But the latter route yields

‘Homer dachte “ $(\exists x)(x \text{ hectors} \ \& \ x \text{ was a mighty warrior})$ ” ’,

since the translation of a quoted expression is just the same quoted expression. The translation preserves the sense of the sentence. Hence, the analysis fails to preserve the sense of the sentence.

But, Quine would reply (see 1960, 159–60), rather than preserve meaning, an analysis should clarify. When we clarify, we seek greater precision rather than identity of meaning. Clarifying, for Quine, involves resolving ambiguity, closing truth-value gaps, and providing explicit references in place of indicator words, and all of these moves do not preserve meaning. Quine maintains that all we can claim for an analysis in terms of expressions is that it always produces a result that agrees with the original in truth value (see 1976, 195–96). As Quine is more interested in constructing a canonical language than interpreting ordinary language, it is perhaps unfair to treat his translations of ordinary language into canonical language as interpretations of ordinary language.

Yet Quine has also given another response to Church's argument. He suggests dispensing with objects for attitudes altogether (see 1960, 216). This involves regarding the 'that' clause in 'Homer thought that Hector was a mighty warrior' to be an expression that attaches to the verb 'to think' to form a predicate that is logically simple, though linguistically complex. That is, we no longer regard the 'that' clause as a denoting term. We likewise cease to regard the infinitive phrase in 'Homer thought Hector to be a mighty warrior' as a denoting term. It just attaches to the verb 'to think' to produce a term expressing a relation. This interpretation of sentences about attitudes involves leaving opaque expressions just as we found them: opaque (see Kaplan 1975, 237).

Quine then asks what the truth conditions of sentences about attitudes are. To discuss these truth conditions I shall find it helpful to have at hand Quine's classification of sentences according to their stimulus meanings. The stimulus meaning of a sentence is the set of stimuli needed to affirm the sentence and also the set of stimuli needed to deny the sentence (see Quine 1960, 32–33).

Quine classifies sentences according to how close they are to their stimulus meanings. Occasion sentences elicit an affirmative or negative reply only in the presence of appropriate stimulation (see Quine 1960, 35–36). Two examples are 'There goes a squirrel' and 'Here comes a bachelor'. The former sentence, unlike the latter, evokes the same reply regardless of information extraneous to the situation; it is an observation sentence (see Quine 1960, 42).

Forming a contrast with occasion sentences are standing sentences. These sentences do not require that we look anew every time we reply to the sentence. Standing sentences assert a verdict that stands for a while. For instance, having ascertained that the *Times* has come, we can go around asserting 'The *Times* has come' for the rest of the day. Earlier in this section I pointed to the need to specify a proposition with an eternal sentence. Eternal sentences are standing sentences that stand for good. Their truth values stay the same even in the mouths of different speakers and when uttered in different circumstances (see Quine 1960, 193).

Even though Quine has gotten rid of senses, he still needs to make sense of sentences about attitudes, that is, give the truth conditions for such sentences. He suggests that we interpret 'Bill said that there goes a squirrel' as 'Bill said something that has for him the stimulus meaning that "There goes a squirrel" has for us' (see 1960, 217). Similarly, Quine continues, we can interpret 'Bill believes that there goes a squirrel' as 'Bill, if asked, would assent to some sentence that has for him the stimulus meaning that "There goes a squirrel" has for us'.

Such interpretations work best when the sentence in whose stimulus meaning we are interested is an observation sentence (see Quine 1960, 217).

Nonobservation occasion sentences are linked to their stimulus meaning by supplementary knowledge. Assent to 'Here comes a bachelor', for instance, requires the knowledge that the fellow is a bachelor. Just seeing the fellow approaching is not enough. 'Here comes a bachelor' will not have the stimulus meaning for Mike that it has for Gloria if Gloria and Mike know different sets of bachelors. Hence, 'Gloria believes that here comes a bachelor' will mean something quite different for Gloria and Mike in terms of stimulus conditions.

As we move from occasion sentences to standing sentences and finally to eternal sentences, the stimulus meaning of a sentence becomes increasingly rich. As we saw above, on the basis of stimulus meaning we can differentiate eternal sentences no finer than into those that are true and those that are false. 'Water is wet' has the same stimulus meaning as 'Salt is salty'. This identity entails that 'Linda believes that water is wet' and 'Linda believes that salt is salty' receive the same interpretation. If we understand belief in terms of stimulus meaning, then as the stimulus meaning of a sentence becomes rich, our understanding of the belief that the sentence is true becomes impoverished.

Quine cannot adequately specify truth conditions in terms of stimulus meaning for propositional attitudes about all types of sentences. Propositional attitudes about standing sentences suffer under Quine's treatment, because standing sentences are remote from their stimulus meanings. Because of these difficulties Quine considers attitudes to be an obscure lot.

He thinks that there is a chasm between literal scientific theory and the essentially dramatic idiom of propositional attitudes (see 1960, 219). And he thinks that apart from such sense as he has made of sentences about attitudes, intensional idiom is baseless (see 1960, 221).

To summarize this section, behavioral means allow us to individuate extensional entities: sets and truth values, but not intensional entities: attributes and propositions. If we cannot individuate intensions, we should not posit them. Without senses we cannot understand attitudes to be relations to senses. Quine favors the alternative of trying to understand propositional attitudes in terms of dispositions to respond to sentences. For propositional attitudes about sentences closely tied to their stimulus meanings, Quine's program works well. Yet propositional attitudes about sentences remote from their stimulus meanings are behaviorally obscure. Thus, if we can express the attitude content with an observation sentence, the propositional attitude is behaviorally clear and distinct. But as we move from propositional attitudes with attitude contents expressed with observation sentences to those with attitude contents expressed with occasion sentences, standing sentences, or eternal sentences, the propositional attitudes become increasingly obscure behaviorally.



## Scope and Opacity

### 13 Incomplete Symbols and Opacity

In section 10, “When Does a Term Occur Transparently?” I distinguished the various ways in which we use singular terms and showed how this usage relates to how we should interpret sentences in which they occur. I then applied Russell’s theory of logically proper names to singular terms used referentially and his theory of descriptions to singular terms used attributively to make the logic of such usage explicit. In this section I shall show how Russell’s semantics provides a theoretical framework that enables the theory to explain why singular terms used attributively occur sometimes transparently and sometimes opaquely in sentences about attitudes.

Russell’s theory of propositions changed under the influence of Wittgenstein. By the time of appendix C of *Principia Mathematica* (Whitehead and Russell 1927) Russell thought that ‘ $p$ ’ as it occurs in ‘ $p \supset q$ ’ denotes a proposition, whereas ‘ $p$ ’ as it occurs in ‘ $a$  believes  $p$ ’ denotes a sequence of psychological occurrences. What is important for us is that Russell no longer thought that ‘ $p$ ’ denotes the same thing in both contexts. I shall ignore Russell’s later theories of propositions. I am interested in how Russell conceived sentences to denote propositions in both intensional and extensional contexts.

Frege’s theory of thoughts forms an interesting contrast to Russell’s theory of propositions. Frege assigned both a sense and a denotation to each term. Sentences denote truth values; proper names denote objects; and predicates denote concepts (or functions from objects to truth values). A term of any type also expresses a sense that determines its denotation. Sentences, for instance, express thoughts that determine truth values. Moreover, a predicate expresses a sense that is a function from the sense of a proper name to a thought. See section 11, “Frege’s Theory of Opacity,” for an exposition of Frege’s theory.

For Russell, terms denote and have no sense apart from what they denote (see Russell 1956, 46 n. dagger). Russell held that the same term always denotes the same entity, even in an intensional context. Sentences denote propositions; logically proper names denote objects; and predicates denote propositional functions, or what I call ‘attributes’ (see Russell 1938, sec. 48, and Whitehead and Russell 1927, 8, 14–15, 66).

Presumably, then, logically proper names designate their ordinary denotations even in clauses subordinate to an attitude verb. If they do, they must occur transparently there and hence allow substitutions based on identity and existential quantification. Statements of attitudes that contain logically proper names must state relational attributive attitudes.

Russell's criterion for when a name is logically proper for a person is that the person be acquainted with the designation (see Whitehead and Russell 1927, 31 n. \*, 66–67, and Russell 1956, 41). However, even if a person is acquainted with  $(\text{the } x)Fx$ , ' $(\text{the } x)Fx$ ' is an incomplete symbol and not a logically proper name. Otherwise, 'Scott is the author of *Waverley*' would mean nothing more than that Scott is Scott (see Whitehead and Russell 1927, 67, and Russell 1956, 50–52). So in addition, a singular term is a logically proper name only if it has the linguistic form of a name.

On the other hand, if a speaker is not acquainted with the designation of a name he uses, that name is functioning as a disguised description for the speaker (see Russell 1956, 54). In that case Russell's theory of descriptions applies.

Well, 'Lucifer' and 'Vesper' are both names of Venus. And it so happens that Bernard is acquainted with Venus as Lucifer (that is, in the morning) and as Vesper (that is, in the evening), and yet he does not know that Lucifer is Vesper. Bernard even states that Lucifer is not Vesper. On Russell's theory of logically proper names 'Lucifer' and 'Vesper' are both logically proper names of Venus for Bernard. So, according to the theory, 'Lucifer is not Vesper' should have the same cognitive significance for Bernard as 'Venus is not Venus', though obviously it does not.

A similar problem arises for 'Bernard thinks that Lucifer is Vesper'. Since the sentence reports Bernard's cognitive state, and since 'Lucifer' and 'Vesper' are logically proper names for Bernard, they occur as logically proper names in 'Bernard thinks that Lucifer is Vesper'. If 'Lucifer' and 'Vesper' are logically proper names, the *truth conditions* for the preceding sentence ought to be the same as those of 'Bernard thinks that Venus is Venus', on Russell's theory. Russell's theory of logically proper names again leads to a conclusion that is obviously not so. The difficulty arises for Russell's theory of logically proper names because Bernard, or anyone, can be acquainted with Venus as Lucifer and as Vesper and yet not know that Lucifer is Vesper.

The trouble lies, I think, with Russell's criterion of when a name is logically proper. Russell is right that names are sometimes logically proper in sentences in which they occur and at other times function as descriptions. However, the criterion of whether a name is logically

proper is not whether the subject of the sentence is acquainted with the denotation but whether the speaker uses the name to refer. A name used referentially always occurs transparently in a sentence, even if the sentence is about an attitude. In such a case the sentence expresses a relational attributive attitude. This is a thesis I argued for in section 10, “When Does a Term Occur Transparently?”

To handle singular terms that lack a denotation and to deal with quandries about the meanings of singular terms, Russell developed his theory of descriptions. What this theory does is to analyze a sentence in such a way that a particular singular term is replaced by an existentially quantified expression containing a predicate. I presented the details in section 7, “Russell’s Theory of Incomplete Symbols.”

Russell’s theory of descriptions applied generally to definite singular terms appearing in sentences about attitudes works as follows (compare with 1956, 51–53). A singular term may be a description, name, or demonstrative. Let be ‘ $A$ ’ a predicate true only of  $a$  if of anything. The contextual definition of the singular term  $a$  is then there is a unique  $A$  that is  $F$ , or in symbols

$$Fa =_{\text{df}} (\exists x)[(y)(Ay \equiv y = x) \ \& \ Fx].$$

If a sentence contains a subordinate sentence, ordinary English is ambiguous, Russell holds (1956, 52–53). For then we know not whether to take the containing sentence or the subordinate sentence as ‘ $Fa$ ’.

Sometimes a singular term is logically proper. If it is, then according to Russell’s theory of logically proper names, it ascribes no properties to its denotation. Rather, it merely picks out the denotation so that the speaker can say something about it (see Whitehead and Russell 1927, 66, and Russell 1962, 103). Ordinary English is thus ambiguous in another regard as well. Is a singular term logically proper or does it behave like a description?

On the theory I am advocating, to resolve these ambiguities we have to consider the statement the speaker makes with a sentence. If a speaker uses a singular term referentially in his statement, we should understand that singular term in his sentence along the lines of Russell’s theory of logically proper names. On the other hand, if a speaker uses a singular term attributively, we should understand that singular term in his sentence along the lines of Russell’s theory of descriptions. Moreover, if a speaker uses a singular term with primary attributive force, he is applying the singular term to whatever it fits and we should regard his

entire sentence as the ‘*Fa*’ in the above definition. But if he uses a singular term with secondary attributive force, he is imputing an attributive conception of the denotation of the singular term to the subject of his statement and we should regard only the attitude content of the speaker’s sentence as the ‘*Fa*’ in the definition above.

To make myself readily understood, I talk in this section in terms of interpreting a sentence according to the statement made with that sentence. With the same degree of logical precision I might also specify a statement by spelling out the references of indicator words and indicating whether the speaker used a singular term referentially, with primary attributive force, or with secondary attributive force. I took the latter approach in section 9, “Use Made Explicit.”

When a speaker uses a singular term either referentially or with primary attributive force, he is asserting a relational attributive attitude. When a speaker uses a singular term with secondary attributive force, he is asserting a notional propositional attitude. Let us consider the three ways in which a speaker can use a singular term in a statement about an attitude.

Suppose John Cook Wilson knew Lewis Carroll as Charles Dodgson, but not as Lewis Carroll. Suppose further that Barbara knows Lewis Carroll, the author of *Alice in Wonderland*, but not Charles Dodgson, the Oxford logician. Andy says to her ‘Cook Wilson thought that Lewis Carroll did not take logic seriously’. Andy’s desire to communicate dictates that he use ‘Lewis Carroll’ rather than ‘Charles Dodgson’. He uses ‘Lewis Carroll’ referentially, only to pick out the man. Andy ascribes a relational attributive attitude to Cook Wilson, as Andy is responsible for his references, not Cook Wilson. The logical form of Andy’s statement is thus ‘Cook Wilson thought  $x[x \text{ did not take logic seriously}]$  of Lewis Carroll’.

Now suppose that Craig believes that Max is a thief and he says so to Bert. Bert does not know Max, so when Bert asserts ‘Craig believes that Max is a thief’, he makes a statement in which ‘Max’ picks out whoever uniquely bears the name ‘Max’ in the context. Bert uses ‘Max’ with primary attributive force. Let ‘to max’ be a predicate true only of Max. Bert’s statement then receives the analysis

$(\exists x)[(y)(y \text{ maxes} \equiv y = x) \ \& \ \text{Craig believes } z[z \text{ is a thief}] \text{ of } x]$ .

In this formula ‘Max’ occurs transparently, because it occurs outside the scope of ‘believes’, as the analysis shows. Bert ascribes a relational attributive attitude to Craig.

Finally, let us suppose that Jim imagines Jane’s husband to be tall, dark, and handsome just because the husband of anyone as beautiful as Jane must be tall, dark, and handsome. If Linda

says 'Jim imagines that Jane's husband is tall, dark, and handsome' with the intention of imputing an attributive conception of Jane's husband to Jim, she uses 'Jane's husband' with secondary attributive force. Her statement receives the analysis

Jim imagines  $[(\exists x)\{(y)(y \text{ is Jane's husband} \equiv y = x) \ \& \ x \text{ is tall, dark, and handsome}\}]$ .

In this case a singular term, 'Jane's husband', occurs within the scope of a verb expressing an attitude. So that singular term occurs opaquely. Linda ascribes a propositional attitude to Jim.

Singular terms occur opaquely when they fall within the scope of an attitude verb in the logical formulation of statements of propositional attitudes. Scope alone, however, cannot explain why a singular term occurs opaquely, for in the scope of ordinary verbs like 'hit', 'build', 'ruin' singular terms occur transparently. How does falling within the scope of a verb expressing an attitude affect the semantics of singular terms?

Frege's answer to this question is that in the scope of an attitude verb a singular term denotes not its ordinary denotation but a sense that determines its ordinary denotation. I elaborated Frege's theory in section 11, "Frege's Theory of Opacity."

Russell provides an ontologically simpler view. Unlike Frege, Russell did not distinguish between sense and denotation (see 1956, 46 n. dagger). For Russell (1962, 103; and Whitehead and Russell 1927, 66), a denoting term means what it denotes. Logically proper names denote objects, predicates denote attributes, and sentences denote propositions (see Russell 1938, sec. 48, and Whitehead and Russell 1927, 8, 14–15, 66).

An extensional atomic sentence is true for Russell if and only if the object named by the proper name in the sentence is a member of the extension of the attribute that the predicate denotes. In a truth-functional sentence all that matters are the truth values of the component propositions (see Whitehead and Russell 1927, 8). Thus, two sentences are truth-functionally equivalent, for example, just in case the sentences denote propositions whose truth values are the same (see Whitehead and Russell 1927, 7, and Russell 1938, sec. 493). For Russell (1938, 503–5), truth values are not objects (the true and the false) that propositions denote. Rather, they are just the circumstance that a proposition is true or the circumstance that it is false.

The truth of a sentence about a propositional attitude, on the other hand, depends on the proposition itself, and not just whether it is true or false. If a sentence is about an attributive attitude, it is the attribute, and not just the objects in its extension, that contributes to determining the truth value of the statement.

Russell's theory of descriptions explains why a singular term in the attitude content of a sentence about a propositional attitude occurs opaquely in the following way. In her statement of 'Jim imagines that Jane's husband is tall, dark, and handsome', Linda uses 'Jane's husband' attributively. So in the analysis of her sentence 'Jane's husband' disappears, and in its place is a quantified expression with the predicate 'is Jane's husband'. Predicates denote attributes in Russell's semantics. We can properly substitute if and only if the predicate substituted denotes the same attribute. If predicates denoted sets instead of attributes in Russell's semantics, his theory of descriptions would not explain why singular terms occur opaquely. For then substituting any predicate coextensive with 'is Jane's husband' should preserve truth, but it does not.

What I have done here is to translate two statements of ordinary English into logical formulae and show that the syntax of these formulae differ in a way that makes a singular term occur transparently in one formula and opaquely in the other. The original English *sentences*, however, may tell us nothing about which analysis is correct. For instance, in a statement of the sentence 'Jim imagines that Jane's husband is tall, dark, and handsome', 'Jane's husband' can have secondary attributive force or not, according to what the speaker's intentions are. Whether a singular term is used referentially or attributively and whether a singular term is used attributively with primary force or attributively with secondary force are *pragmatic* distinctions. Hence, in ordinary English, only in the context of a statement does a term occur transparently or opaquely in a sentence. Few writers in the philosophy of language take this view, even though these distinctions significantly affect the interpretation of ordinary English sentences. That is unfortunate, for the pragmatic perspective is important for understanding sentences of ordinary English.

At this point one can see why Russell regarded his theory of descriptions as so important. Nondenoting singular terms present a problem for Frege. Since the denotation of a sentence is a function of the denotations of its designating terms, a sentence will be neither true nor false if it contains a nondenoting singular term. Yet clearly there are true sentences that contain nondenoting singular terms. An example from Whitehead and Russell (1927, 69) is 'The king of France is not bald', true because there is no king of France. This example involves no oblique context; it involves only the truth function *not*. Hence, it is not open to Frege to claim that the singular term 'the king of France' denotes its sense rather than its ordinary denotation because the context is oblique.

Nondenoting singular terms presented a problem for Russell as well, until he hit upon his theory of descriptions. If a sentence is analyzed along the lines of this theory, singular terms are eliminated in favor of existential quantifiers and predicates. The theory allows a sentence containing a nondenoting singular term to be true by making it be about intensional entities (attributes and propositions) rather than extensional entities (objects) and construing those intensional entities to fall within the scope of an extensional or intensional function term. Russell's theory thus assumes no ambiguity to explain why terms occurring in a sentence about a propositional attitude are sometimes opaque. Proper names always denote objects, predicates always denote attributes, and sentences always denote propositions. Russell's logic is intensional in that it posits intensional entities like propositions and attributes.

On Russell's theory, if a predicate term appears in an intensional context, it occurs opaquely. That is, substituting for that predicate term a coextensive predicate term does not in general leave the truth value unchanged. However, substituting a predicate term denoting the same attribute is valid. The reason such a substitution is valid is that predicate terms denote attributes, not sets. What we have to explain is why substituting a coextensive predicate in an extensional context is valid. Such a substitution is valid because the extensions of attributes and the objects of the domain are all that determine the truth value of an extensional subject-predicate proposition.

Russell has sentences denoting propositions rather than truth values. This semantics explains why sentences about propositional attitudes are opaque for subordinate sentences occurring in them. A sentence about a propositional attitude is opaque for a subordinate sentence (that is, substituting a sentence alike in truth value will in some cases alter the truth value of the entire sentence) because the subordinate sentence denotes a proposition, as it always does. However, substituting in a sentence about a propositional attitude a sentence that denotes the same proposition is valid on Russell's semantics.

But why, then, is substituting a sentence alike in truth value valid in a truth-functional context? Truth functions, on Russell's semantics, are functions that take propositions as arguments and return propositions as values, but the truth value of the resulting proposition is a function solely of the truth values of the argument propositions. Thus, truth functions work as if they were functions from truth values to truth values. In truth functions only the truth values of argument propositions are relevant to the truth value of the whole proposition. And only in truth functions is this so. Hence, only in truth-functional sentences can we substitute a sentence of like truth value without changing the truth value of the containing sentence.

In this section we have seen how Russell accounts for opaque terms in sentences about propositional attitudes. He does so without assuming that expressions are ambiguous, denoting their ordinary denotation in extensional contexts and their senses in intensional contexts, as does Frege (see section 11, “Frege’s Theory of Opacity”). But to account for nonextensionality (there is no real opacity on Russell’s theory) Russell has some designator terms (predicates and sentences) denoting intensional entities (attributes and propositions, respectively).

#### 14 The Need for Intensional Entities

In the last section, “Incomplete Symbols and Opacity,” I argued informally that unless predicates denote attributes, Russell’s theory of descriptions does not explain why singular terms occur opaquely in opaque contexts like those of sentences about attitudes. In this section I shall formally prove that considerations of scope alone do not explain why terms occur opaquely in opaque contexts.

If a term appears to occur opaquely in a given context and we provide an analysis that allows us to substitute a codenoting term for the apparently opaque term, we have shown what the term denotes. The analysis may be such that the original term acquires a different denotation, as in Frege’s theory (see section 3, “The Fregean Tradition”), or such that the original term disappears, as in Russell’s theory of descriptions. As we saw in section 13, “Incomplete Symbols and Opacity,” if ‘*A*’ is a predicate true only of *a*, Russell’s analysis of a sentence containing *a* is

$$Fa =_{\text{df}} (\exists x)[(y)(Ay \equiv y = x) \ \& \ Fx].$$

We can construe Russell’s analysis as saying nothing about what the denotations of the terms are but merely specifying how we are to understand singular terms in terms of quantified expressions containing predicates. We thus leave open whether predicates denote attributes or sets. In section 13, “Incomplete Symbols and Opacity,” I stated that in Russell’s semantics predicates denote attributes. They do not express attributes or have attributes as their senses; rather, they denote attributes. (Russell’s term for attributes was ‘propositional function’. See Whitehead and Russell 1927, 14–15, and Russell 1956, 46 n. dagger.) But suppose that predicates denote not attributes but sets, as is usual in semantics. What this means is that we



understand the above formulation of Russell's analysis in the following terms.  $A$  is now a set that contains only  $a$ , if anything.

$$a \text{ is in } F =_{\text{df}} (\exists x)[(y)(y \text{ is in } A \equiv y = x) \ \& \ x \text{ is in } F]$$

The question I want to address is: does Russell's theory of descriptions then explain why a singular term occurs opaquely when it occurs in the attitude content of a sentence about a propositional attitude?

As I stated above, if a term appears to occur opaquely in a given context and we provide an analysis that allows us to substitute a codenoting term for the apparently opaque term, we have shown what the term denotes. Hence, if Russell's theory of descriptions shows why terms appear to occur opaquely in sentences about attitudes, after we apply Russell's theory of descriptions, substituting terms denoting identicals should be valid. Moreover, substituting logically equivalent expressions ought to be valid in intensional contexts, since logically equivalent expressions have identical intensions. But if we allow these two reasonable assumptions, hold Russell's analysis, and maintain that predicates denote sets, we destroy the logic of propositional attitudes.

To see this, consider ' $Fp$ ' to express someone's propositional attitude. On the hypothesis under consideration the set  $F$  contains  $p$ .  $F$  might be the set of everything that Chris believes, for instance. (I shall use ' $V$ ' to denote the universal set.) Suppose ' $x$ ' is not free in ' $p$ '; if it is free, we simply replace ' $x$ ' with another letter. Obviously, ' $p$ ' is logically equivalent to ' $\{x: x = x \ \& \ p\} = V$ '. Substituting logical equivalents, we get that  $(\{x: x = x \ \& \ p\} = V)$  too is in  $F$ . Now take any proposition  $q$  such that  $p$  if and only if  $q$  and ' $x$ ' is not free in ' $q$ '. Clearly,  $\{x: x = x \ \& \ p\}$  is identical to  $\{x: x = x \ \& \ q\}$ . Since  $F$  is a set, it does not matter how we designate its elements: they are still elements of  $F$ . Substituting a codesignating term, we get that  $(\{x: x = x \ \& \ q\} = V)$  is in  $F$ . As ' $x$ ' is not free in ' $q$ ', ' $q$ ' is logically equivalent to ' $\{x: x = x \ \& \ q\} = V$ '. Substituting logical equivalents again, we deduce that  $q$  is in  $F$ . It appears that Chris believes that  $q$ , for any  $q$  such that  $p$  if and only if  $q$ . (This argument is in Quine 1961, 159, and Davidson 1984, 19; also see Quine 1976, 163–164.)

The argument plagues us even after we apply Russell's theory of descriptions. For then instead of ' $Fp$ ' we have

$$'F\{(\exists x)[(y)(Ay \equiv y = x) \ \& \ Gx]\}'$$

if ' $p$ ' is ' $Ga$ '. Nothing in the argument depends on the logical form that ' $p$ ' takes.

We assumed that we may substitute logically equivalent expressions in intensional contexts. We assumed that analysis allows us to substitute codesignating terms, though prior to analysis the term appeared to occur opaquely. We assumed nothing about what the variables ' $p$ ' and ' $q$ ' denote, though we did assume that predicates (e.g., ' $F$ ') denote sets. What we have shown on these assumptions is that if a person holds a propositional attitude about some proposition, he holds that attitude about any truth-functionally equivalent proposition. Thus, if James hopes that  $p$ , and  $p$  if and only if  $q$ , then James hopes that  $q$ . But that cannot be.

Some of our assumptions must be wrong. What is wrong is our assumption that predicates denote sets. They obviously do not denote sets in sentences about propositional attitudes. Hence, if we understand predicates to denote sets, Russell's theory of descriptions does not even conform to the logic of sentences about propositional attitudes, say nothing of whether it explains why a singular term occurs opaquely in a sentence about a propositional attitude.

If predicates denote attributes, on the other hand, the argument breaks down. For then the identity on the basis of which we seek to substitute is

$$'x[x = x \ \& \ p] = x[x = x \ \& \ q]'$$

(' $p$ ' and ' $q$ ' again do not contain ' $x$ ' free). But these two attributes are identical if and only if ' $p$ ' and ' $q$ ' are analytically equivalent. If ' $p$ ' and ' $q$ ' have the same truth value but are not analytically equivalent, the two attributes are not identical. In the proof above we assumed merely that ' $p$ ' and ' $q$ ' are alike in truth value.

In a similar manner we can also argue that singular terms do not denote in intensional contexts what they ordinarily denote. Assume that we have clarified what a singular term denotes in an apparently opaque context only if we may legitimately substitute a codesignating singular term. Again, substituting a logically equivalent expression in an intensional context ought to be valid, as logically equivalent expressions have identical intensions. Let ' $Fp$ ' express someone's propositional attitude, and let ' $p$ ' not contain ' $x$ ' free. Because ' $x$ ' is not free in ' $p$ ', ' $p$ ' is logically equivalent to

$$'(\text{the } x)(x = 1 \ \& \ p \ . \vee \ x = 0 \ \& \ \sim p) = 1'.$$

Substituting a proposition logically equivalent to ' $p$ ', we deduce from ' $Fp$ ' that

$$F[(\text{the } x)(x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p) = 1].$$

Let  $q$  be a proposition such that  $p \equiv q$  and ' $x$ ' is not free in ' $q$ '. Because  $p$  and  $q$  are truth-functionally equivalent,

$$(\text{the } x)(x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p) = (\text{the } x)(x = 1 \ \& \ q \ .\vee. \ x = 0 \ \& \ \sim q).$$

By hypothesis we are assuming that singular terms denote their ordinary denotations even in intensional contexts. So we should be able to use the above identity and deduce that

$$F[(\text{the } x)(x = 1 \ \& \ q \ .\vee. \ x = 0 \ \& \ \sim q) = 1].$$

Since ' $q$ ' is logically equivalent to

$$'(\text{the } x)(x = 1 \ \& \ q \ .\vee. \ x = 0 \ \& \ \sim q) = 1',$$

it follows that  $Fq$  for any  $q$  that has the same truth value as  $p$ .

But obviously, people believe true things without believing everything that is true, and they believe false things without believing everything that is false. Hence, singular terms must not denote their ordinary denotations in intensional contexts. (The argument appears in Quine 1960, 148–49, and Church 1956, 24–25. Also see Frege 1984, 144–45, 164.)

Quine takes the above arguments to show only that designator terms in intensional contexts do not have their ordinary denotations. In at least one context (1960, 216) he concludes that designator terms in intensional contexts denote nothing. But if we give up on what designator terms in the attitude contents of sentences about attitudes denote, we thereby give up on what the truth conditions of such sentences are (see the end of section 6, “The Quest for Transparency”). And to admit defeat on the truth conditions of sentences about attitudes is to accept attitude idiom as empty, as Quine does (1960, 221).

Suppose that a subordinate sentence and an attitude verb form a complex predicate that specifies an attribute, but the subordinate sentence in that predicate denotes nothing. The proposal is similar to one of Quine's (see Quine 1960, 216, and Davidson and Hintikka 1975,

344). Is having this attribute related in any systematic way to the truth value of the subordinate sentence? If it is, then the truth value of the subordinate sentence determines whether or not one possesses the attribute. But then all true beliefs would be the same belief. This is obviously not so. On the other hand, if having this attribute is not related in any systematic way to the truth value of the subordinate sentence, there must be an exceedingly great number of unanalyzable attitudinal attributes, since the variety of sentences about propositional attitudes is nearly unlimited. But an exceedingly great number of unanalyzable attitudinal attributes makes propositional-attitude idiom unlearnable.

One way to counter the above argument is not to allow substitution of logical equivalents in sentences about attitudes. Indeed, if we allow such substitutions, we assume that everyone can follow out all the logical implications of their beliefs, which is obviously not the case. This we saw in the discussion of Carnap's theory about belief sentences (see the end of section 3, "The Fregean Tradition").

From here to the end of this section I shall consider whether the above argument involving substitution of singular terms applies to Russell's theories of descriptions and of logically proper names. What I want Russell's theories to do is to construe terms occurring in the attitude content of sentences about attitudes so that they occur transparently. This it does by having predicates denote attributes, having sentences denote propositions, and making singular terms sometimes vanish. But if the argument involving substitution of singular terms applies to Russell's theories, it shows that predicates and sentences denote sets and truth values, not attributes and propositions. Hence, we need to show that the argument does not apply to Russell's theories.

It does not apply to Russell's theory of descriptions. For if we apply Russell's theory of descriptions to an essential step of the argument, we get:

$$F[(\text{the } x)(x = 1 \ \& \ p \ \vee \ x = 0 \ \& \ \sim p) = 1]$$

$$=_{\text{df}} F\{(\text{Ex})[(y)(y = 1 \ \& \ p \ \vee \ y = 0 \ \& \ \sim p : \equiv y = x) \ \& \ x = 1]\}.$$

The singular term

$$‘(\text{the } x)(x = 1 \ \& \ p \ \vee \ x = 0 \ \& \ \sim p)’$$

disappears in the analysis, and substituting ' $q$ ' for ' $p$ ' in an intensional context ' $F$ ' is valid if and only if ' $p$ ' and ' $q$ ' have the same intension, or are analytically equivalent. In the proof above we assumed merely that ' $p$ ' and ' $q$ ' are truth-functionally equivalent. Hence, the argument fails if Russell's theory of descriptions and his semantics are correct.

We can use descriptions too to refer (see section 8, "Referential versus Attributive Use"). So if we make reference the criterion of when a singular term is logically proper, descriptions may be logically proper. Whenever a singular term is logically proper, we may legitimately substitute a codesignating singular term. So the argument involving substitution of singular terms works, it would seem. For

'(the  $x$ )( $x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p$ ) = 1'

denotes a proposition logically equivalent to  $p$ . And if

'(the  $x$ )( $x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p$ )',

is logically proper, it designates

(the  $x$ )( $x = 1 \ \& \ q \ .\vee. \ x = 0 \ \& \ \sim q$ ).

But the argument again fails. The reason is that if

'(the  $x$ )( $x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p$ )',

is logically proper,

'(the  $x$ )( $x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p$ ) = 1'

is not a propositional term. Rather,

'(the  $x$ )( $x = 1 \ \& \ p \ .\vee. \ x = 0 \ \& \ \sim p$ )'

denotes

$(\text{the } x)(x = 1 \ \& \ p \ \vee \ x = 0 \ \& \ \sim p)$

and ‘= 1’ denotes the attribute  $x[x = 1]$ . Russell allowed that a sentence containing a logically proper name denotes proposition containing object (see 1938, 45, 47). But I reject this part of Russell’s theory of propositions as a bit of nonsense.

In this section we saw that if predicates denote sets, Russell’s theory of descriptions does not explain why a term occurs opaquely in an intensional context. But if predicates denote attributes, it does. I then presented an argument that singular terms must not denote their ordinary denotations in intensional contexts. The argument implies that if singular terms denote objects in intensional contexts, predicates denote sets and sentences denote truth values in intensional contexts. This would destroy Russell’s semantics. But when we apply Russell’s theory of descriptions, we no longer have singular terms. And logically proper names do not occur in intensional contexts. So I argued.

## 15 Exportation

In section 4, “Quine on Attitudes,” I briefly discussed the deduction of exportation. Exportation, recall, is the deduction of an attributive attitude from a propositional attitude. It is the deduction of, for instance, ‘Tom believes Cicero to have denounced Catiline’ from ‘Tom believes that Cicero denounced Catiline’. The reason for my interest in exportation is that by examining the conditions under which this deduction holds, we may gain some insight into the objects of propositional attitudes. This is because a term occurring opaquely in a sentence about a propositional attitude occurs transparently in a sentence about the corresponding relational attributive attitude.

Quine first formulated the deduction of exportation in “Quantifiers and Propositional Attitudes” (1976, 185–96). Robert Sleight (1968, 397 n. 9, and 1967, 28) presents a counterinstance to exportation as Quine presents the deduction. Toward the end of section 4, “Quine on Attitudes,” I presented Sleight’s counterexample to exportation. In “Quantifying In” (1975, 206–42) David Kaplan argues that to export a singular term it must do more than just denote. He thinks that one can properly export a singular term only under certain epistemic conditions (see 1975, 221). Statements of relational attributive attitudes assert, according to Kaplan, that these epistemic conditions hold.

In this section I shall discuss the deduction of exportation and Kaplan's criteria for exporting singular terms. This will lead to a discussion of what sentences about relational attributive attitudes express. Kaplan's account of such sentences, I find, is mistaken. I shall give my interpretation of sentences about relational attributive attitudes and discuss the implications for exportation. We shall discover that the deduction of exportation is not really a deduction at all. Finally, I shall discuss how I understand Kaplan's notion of representative names, which, according to Kaplan, justify a statement of a relational attributive attitude.

At the beginning of section 4, "Quine on Attitudes," I drew the distinction between a relational, or *de re*, attitude and a notional, or *de dicto*, attitude. To briefly review that distinction, any singular term in a sentence about an attitude may occur transparently or opaquely, depending on how the singular term is used. If a singular term occurs transparently, the sentence expresses a relation between the subject of the sentence and the object that the singular term denotes or refers to. On the other hand, if the whole attitude content of the sentence is opaque, the sentence expresses a notional propositional attitude.

To make the distinction clear, I used the locution '*a* believes *b* to be *F*', for example, to mark a relational attributive attitude and the locution '*a* believes that *b* is *F*' to mark a notional propositional attitude. However, as we discovered in section 10, "When Does a Term Occur Transparently?" a speaker may use '*b*' in '*a* believes that *b* is *F*' referentially. If he does, the statement asserts a relational belief. The distinction is not between various forms of locution but between whether a statement of an attitude expresses a relation between the subject and one or more other things, or expresses something about just the subject himself. With this understood, I shall use the locution '*a* believes *b* to be *F*' to express belief in the relational sense and the locution '*a* believes that *b* is *F*' to express belief in the notional sense and similarly for other attitudes.

Sleigh's counterexample to exportation is, to give an example,

Ralph believes that the youngest spy is a spy.

(Ex) *x* = the youngest spy.

Ergo, Ralph believes the youngest spy to be a spy.

Moreover, from this last sentence it follows by existential generalization that

(Ex) Ralph believes *x* to be a spy.

Ralph has no particular individual in mind when he believes that the youngest spy is a spy. But the last displayed sentence, Quine (1976, 185–87) and Kaplan (1975, 220) hold, asserts that Ralph has a belief about a particular individual, one whom he can presumably identify. Thus, the deduction of exportation entails that whenever Ralph is clever enough to be able to frame a name of something that exists, he must be able to identify it, even when he has no particular individual in mind about whom he has his belief.

Kaplan desires to maintain a distinction between propositional and attributive attitudes. Yet exportation in its present form allows one to deduce the attributive attitude from the propositional attitude on the mere premise that the exported term uniquely denotes. Exportation does not destroy the distinction, but if it holds, it means that a person may have an attributive attitude about someone he cannot even identify. Kaplan finds exportation in its above form too facile a deduction. In order to export a singular term occurring in the attitude content of a sentence about a propositional attitude, the singular term must satisfy certain conditions with regard to the subject of the sentence, he finds.

Kaplan thinks that a statement of a relational attributive attitude asserts that the subject is en rapport with the object that his attitude is about (see 1975, 231). This requires that the subject have at his command a singular term that represents the object for him. A singular term represents an object for a person just in case the singular term denotes the object, the singular term is genetically connected to the object for him, and the singular term is vivid for him (see Kaplan 1975, 231). I shall discuss each of these relations in turn. According to Kaplan (1975, 230–31), we may legitimately export a singular term in a sentence about a propositional attitude if and only if the singular term represents its denotation for the subject of the sentence.

Kaplan explicates the concept of denoting in terms of resemblance (see 1975, 225–28). Just as a picture resembles its subject, so a singular term denotes its object. A singular term denotes an object by describing it.

This analogy is most apt in the case of descriptions. If a picture is accurate, it is true *to* its subject. Similarly, if a description describes an object well, it is true *of* it. A picture can resemble things other than what it is a picture of. Likewise, a description is true of things other than what it designates on a particular occasion of use. A description denotes whatever it is true of. The descriptive content of a description determines what it denotes (see Kaplan 1975, 228).



Even names, Kaplan holds, have descriptive content. A name denotes all and only objects so dubbed (see Kaplan 1975, 228). Thus, 'John' denotes everyone and everything dubbed 'John'.

How do we designate a particular object when a singular term has several denotations? We take it to designate the object it is genetically connected to for the speaker. A singular term is genetically connected to an object, or *of* an object, just in case it has a history that begins with dubbing the object with the singular term in the presence of the object. A singular term is *of* an object for a particular person if it has been passed on to him with such a history.

Kaplan again uses the analogy of a picture. A picture is *of* something if that thing is the model for the picture (see Kaplan 1975, 226). A picture is a picture *of* its model even when it gets passed on from person to person. When we apply this analogy to singular terms, we get the formula of the preceding paragraph.

If we use a definite description, like 'the butcher's', without any explicit dubbing and in the absence of what we refer to, as we often do, such a description will not be *of* anything (see Kaplan 1975, 228–29), though it may adequately pick out what we refer to by denoting. Being *of* something guarantees that the designation of a singular term exists.

A singular term is vivid for a person when he can call to mind sufficient images, names, and partial descriptions of the denoted object for us to say that he is acquainted with the object (see Kaplan 1975, 229). Denoting is a relation between a singular term and what it denotes. Genetic connection is a relation of a singular term, what it denotes, and a person. These two relations involve the external real world. In contrast, whether a singular term is vivid or not for a person depends only on his internal mental world.

If a singular term denotes an object, is genetically connected to the object for a person, and is vivid for him as well, then let us say, with Kaplan (1975, 231), that the singular term represents the object to that person. To summarize Kaplan's thesis, then, a sentence about a propositional attitude implies a sentence about an attributive attitude if and only if the exported singular term represents its designation for the subject of the sentence (see 1975, 230–31). The conditions for deducing a sentence about a relational attributive attitude also hold for asserting a sentence about a relational attributive attitude. Thus, if *a* believes *b* to *F*, the singular term '*b*' must represent *b* to *a*.

I now want to show that the notion of a singular term representing an object to a person does not capture what is necessary for deducing a sentence about a relational attributive attitude from a sentence about a propositional attitude. Kaplan's version of exportation is: if *a* believes

that  $Fb$ , and ' $b$ ' represents  $b$  to  $a$  then  $a$  believes  $b$  to  $F$ . What I shall show is that if ' $b$ ' is used attributively, it is possible that  $a$  believes that  $Fb$  and ' $b$ ' represents  $b$  to  $a$  and yet  $a$  does not believe  $b$  to  $F$ .

Suppose that Ahmad Ismail murders Smith in a most brutal manner. At one point during Ismail's trial Jones points to Ismail in the stand and says 'There is Smith's murderer'. Later in an unconnected context Jones asserts that Smith's murderer must be insane, solely because of how mutilated Smith's body was when it was found. In such a case Jones believes that Smith's murderer must be insane. 'Smith's murderer' represents Ismail for Jones. Yet the deduction that Jones believes of Ismail that he must be insane is unwarranted. 'Smith's murderer' has secondary attributive force in the statement that Jones believes that Smith's murderer must be insane. So Jones's belief is that whoever murdered Smith must be insane (see above section 8, "Referential versus Attributive Use"). His belief is not about Ismail at all. Exporting the singular term 'Smith's murderer' is not warranted.

Other attitudes make the point easier to see. Suppose that 'the vicar' represents Peters to the mayor. Suppose further that the mayor was outraged that the *vicar* committed pederasty and yet cared not a whit about Peters, the man. In such a case 'The mayor was outraged that the vicar committed pederasty' would be true, yet 'The mayor was outraged at Peters for having committed pederasty' would be false, if such a sentence expresses the relational attitude of being outraged.

The problem with Kaplan's notion of a singular term that represents an object for a person is that it does not capture the different uses to which a speaker can put a singular term whether it represents the subject of his sentence or not.

We can see this symbolically as well. In section 9, "Use Made Explicit," we found that we can represent a statement of a propositional attitude in which a singular term has secondary attributive force using Russell's theory of descriptions. Let  $a$  be the subject,  $F$  the attitude, and  $Gb$  the propositional content of  $a$ 's attitude. Consider ' $B$ ' to be a predicate true only of  $b$ . A statement of  $a$ 's attitude has the form

$$F\{a, (Ex)[(y)(By \equiv y = x) \& Gx]\}.$$

Since ' $F$ ' is an intensional context, even if  $b$  exists, it does not follow that

$$(Ex)[(y)(By \equiv y = x) \& F(a, Gx)],$$

as Whitehead and Russell note (1927, 184). Even if ' $b$ ' represents  $b$  for  $a$ , it does not follow. The reason is plain: the second formula expresses an attributive attitude, whereas the first one expresses a propositional attitude.

In general, we may not export a singular term in the attitude content of a sentence about a propositional attitude when the singular term has secondary attributive force, whether it represents or not.

We now have the means correctly to construe Sleigh's alleged counterexample to exportation:

Ralph believes that the youngest spy is a spy.

(Ex)  $x$  = the youngest spy.

Ergo, Ralph believes the youngest spy to be a spy.

In Sleigh's alleged counterexample 'the youngest spy' specifies whoever happens to be the youngest spy. The term is Ralph's. 'The youngest spy' thus has secondary attributive force in a statement of 'Ralph believes that the youngest spy is a spy'. Hence, Russell's theory of descriptions applies with quantifier within the scope of 'to believe'. So we may not export 'the youngest spy' in this case.

What remains of Kaplan's thesis is that if a speaker uses a singular term *referentially* in a statement of a propositional attitude, his sentence implies a sentence about a corresponding relational attributive attitude if and only if the exported singular term represents its denotation for the subject of the sentence. But as we saw above in section 10, "When Does a Term Occur Transparently?" if the speaker uses a singular term referentially in a statement, his sentence is transparent for that singular term, even if the singular term occurs in the subordinate clause. In such a case, the statement asserts not a propositional attitude but an attributive attitude. Rather than implying a statement of an attributive attitude (if the exported term represents), such a statement *is* a statement of an attributive attitude.

If a speaker asserts 'Henry hopes that he gets an increase in salary', for instance, he is using 'he' referentially. Hence, the pronoun occurs transparently in his sentence. The speaker thus asserts a relational attributive attitude. We cannot export 'he' because it already occurs outside the attitude content of the sentence.

To tidy up a loose end, I want to say what I think Kaplan sought to accomplish with his notion of a singular term that represents an object to a person. Quite simply, he sought to insure that a singular term designated a *particular* thing for a person on any occasion of use, and not just some unique *specific* thing. (Note the derivation of the words: ‘particular’ from ‘particle’ and ‘specific’ from ‘species’.) But a speaker do not always use a singular term to pick out a particular individual. He sometimes uses a singular term attributively, even when it represents an object for him. That is, a speaker sometimes uses a singular term to denote whatever uniquely satisfies a certain condition (see Donnellan 1971, 198, and section 8, “Referential versus Attributive Use,” above).

When we use a singular term referentially, however, we use it to pick out a particular thing. If a person succeeds in using a singular term to refer to an object, the singular term must denote the object and also be genetically connected to the object. A speaker can be most confident that a singular term he uses referentially succeeds in referring when the singular term is vivid for him. In short, Kaplan’s criteria of when a singular term represents an object to a person tell us when he can use the singular term to refer to the object, but not when he does.

In this section I looked at exportation in the hope that the conditions under which we may deduce a relational attributive attitude from a propositional attitude would provide some insight into the objects of propositional attitudes. This hope was dashed when we discovered that exporting singular terms used attributively is unwarranted and exporting singular terms used referentially is no deduction.

So the distinction between propositional and relational attributive attitudes remains secure. Indeed, since there is no deduction of exportation, the truth conditions of statements of propositional attitudes and those of statements of relational attributive attitudes are more independent than if there were such a deduction.

As before, the only difference between a sentence about a relational attributive attitude and a sentence about the corresponding notional propositional attitude is that the sentence about the relational attitude has singular terms occurring transparently whereas the sentence about the notional attitude has them occurring opaquely. As we discovered in section 10, “When Does a Term Occur Transparently?” when the subject of a statement about an attitude conceives an object referentially, the truth conditions of a statement of an attributive attitude are satisfied. And when the subject of a statement about an attitude conceives the objects his attitude is about attributively, the truth conditions of a statement of a propositional attitude are satisfied. I also argued in that section that a term is used referentially if and only if it is not used attributively.

From this it follows that the truth conditions of statements of relational attributive attitudes and those of statements of propositional attitudes are fully independent.

The primary accomplishment of this section has been to show that the truth conditions of statements of propositional attitudes and those of statements of relational attributive attitudes are fully independent. I did this by showing that the deduction of exportation is not really a deduction at all. I then looked at the truth conditions of statements of propositional attitudes and relational attributive attitudes to argue further that a propositional attitude is distinct from the corresponding attributive attitude.

## Conclusion

Statements about attitudes assert that the subject has a disposition toward a proposition or attribute. What the disposition is depends on the particular attitude. Believing a proposition, for instance, is a disposition to affirm the proposition if queried and to act in ways consistent with it. Fearing a proposition is a disposition to be anxious that the proposition will come true.

Yet some propositional attitudes are very mental in character. When a person is thinking that *p*, for example, he considers the possibility that *p*. If his attention moves elsewhere, he is no longer thinking that *p*. Yet thinking does not show itself behaviorally, for a person can do other things while thinking, like taking a walk. Nor is thinking dispositional, since it may have no effect the thinker's beliefs or behavior.

Following Quine (1976, 185–88), I distinguished between propositional attitudes and attributive attitudes. A propositional attitude is an attitude toward a proposition; an attributive attitude is an attitude toward an attribute.

One of the important findings of this essay is my demarcation of when a speaker asserts a propositional attitude and when a relational attributive attitude. If a speaker uses a singular term referentially or with primary attributive force, his statement asserts a relational attributive attitude and extra singular terms occur transparently in his sentence. If the speaker uses all his singular terms with secondary attributive force, his statement asserts a propositional attitude and the entire dependent clause is opaque in his sentence.

These conditions for when a speaker asserts a propositional attitude and when a relational attributive attitude translate into conditions for when an attitude is a propositional attitude and when a relational attributive attitude. When the subject conceives his attitude to be about whatever fits a particular singular term, he has a propositional attitude. When he thinks an attribute applies to a particular object however conceived, he has a relational attributive attitude.

These two ways of conceiving objects match the two ways we have of using singular terms: the referential use and the attributive use. A speaker uses a singular term referentially if he uses it only to pick out his referent and not to attribute some property to it. A speaker uses a singular term attributively if he makes a statement about whatever the singular term fits.

Another task that this work set for itself was to develop a semantics for sentences about attitudes. This I did with reasonable success, using Russell's semantics and applying his theory of descriptions to singular terms. According to Russell's semantics, logically proper names

denote objects, predicates denote propositional functions, and sentences denote propositions. Propositional functions are what I call ‘attributes’. Singular terms are logically proper when used referentially. When used attributively, I apply Russell’s theory of descriptions to the singular term in the sentence. On analysis a predicate takes the place of the singular term. A predicate occurs opaquely in the attitude content of a sentence about an attitude, because it denotes an attribute.

Carnap argued that if beliefs are about propositions, in a sentence about a belief we should be able to substitute a long, perplexing yet logically equivalent sentence, but such substitutions often alter the truth value of the sentence (see 1956, 53–54 and section 3, “The Fregean Tradition”). This argument applies to sentences about attitudes construed according to Russell’s semantics. What we can do to meet this argument is to allow substitution only when two expressions are intensionally isomorphic.

A consequence of this move is that two complex expressions then denote the same intension if and only if they are intensionally isomorphic. That is, two complex predicates denote the same attribute if and only if they are intensionally isomorphic, and two sentences denote the same proposition if and only if they are intensionally isomorphic. Singular terms denote objects if used referentially and give way to predicates if used attributively. I am modifying the traditional notions of proposition and attribute here and advocate this modification only for the theory of attitudes.

In section 3, “The Fregean Tradition,” I argued that intensional isomorphism does not allow substitution in the attitude content of a sentence about belief. To recall that argument, two expressions are intensionally isomorphic just in case each of their corresponding terms are logically equivalent. By examining expressions apart from use, Carnap was led to think that ‘D’ is intensionally isomorphic to ‘500’ (see 1956, 56–57). If two terms are intensionally isomorphic, they are interchangeable in belief contexts, according to Carnap (1956, 61–62). But clearly ‘Jim believes that  $D = 5000$ ’ is not even materially equivalent to ‘Jim believes that  $500 = 5000$ ’.

Let us consider this sentence under the theory I propose. In a normal use of the sentence ‘Jim believes that  $D = 5000$ ’ the speaker is not using ‘D’ referentially, just to pick out the number 500. Rather, he is talking about the use of the singular term ‘D’, whatever it applies to. Hence, he is using it attributively. If we apply Russell’s theory of descriptions to the sentence, we get

‘Jim believes that  $(\exists x)[(y)(y \text{ is } D \supset y = x) \ \& \ x = 5000]$ ’.

We cannot substitute ‘500’ for ‘D’ because  $x[x \text{ is } D]$  is not identical to  $x[x \text{ is } 500]$ . ‘D’ specifies 500 using the Roman base-five system of counting, whereas ‘500’ specifies the number using the Arabic decimal system of counting. In Carnap’s terminology, ‘D’ and ‘500’ express different individual concepts and so are neither logically equivalent nor intensionally isomorphic, Carnap’s own opinion notwithstanding.

By using Russell’s semantics and applying his theories of descriptions and logically proper names to Donnellan’s distinction between the referential and the attributive uses of singular terms, we have thus come up with a semantics that works reasonably well for both extensional contexts and attitude contexts.



## Appendix

### A Note on Notation

In this essay I sometimes paraphrase bits of ordinary language in logical notation. Unless otherwise noted, in logical formulae ‘ $x$ ’, ‘ $y$ ’, and ‘ $z$ ’ are individual variables; ‘ $a$ ’, ‘ $b$ ’, and ‘ $c$ ’ are individual constants; ‘ $F$ ’, ‘ $G$ ’, ‘ $H$ ’, and ‘ $T$ ’ are attribute constants; and ‘ $p$ ’, ‘ $q$ ’, and ‘ $r$ ’ are propositional constants. If the reader prefers not to reify attributes and propositions, he may regard ‘ $F$ ’, ‘ $G$ ’, ‘ $H$ ’, and ‘ $T$ ’ as placeholders for predicates, and ‘ $p$ ’, ‘ $q$ ’, and ‘ $r$ ’ as placeholders for sentences. I italicize constants and variables but not other logical symbols, the ‘ $\exists$ ’ of existential quantifiers in particular.

I make use of a common notation for first-order predicate logic. Symbols for first-order predicate logic have the readings given in table 1.

Table 1 Logical symbols

Symbol	Reading
$\sim p$	not $p$
$p \ \& \ q$	$p$ and $q$
$p \vee q$	$p$ or $q$
$p \supset q$	if $p$ then $q$
$p \equiv q$	$p$ if and only if $q$
$(\exists x)Fx$	Something $F$ s
$(x)Fx$	Everything $F$ s

To specify the scope of unary operators I use parentheses ( ), brackets [ ], and braces { } as delimiters. I have parentheses indicate innermost scope and braces indicate outermost scope. I sometimes use parentheses, brackets, and braces other than as delimiters. I use braces to specify sets, for instance. These alternative uses are explained below. To specify the scope of binary operators I use dots (e.g.,  $\cdot$  :). A larger number of dots indicates greater scope. The scope of a set of dots extends to a set of a greater number of dots, to the first unpaired fence, or to the end of the formula. When a displayed formula runs over to extra lines, I try to break before a binary operator and to align the binary operator under the beginning of its first term.

I also use some less familiar logical notation. For descriptions I use the notation ‘ $(\text{the } x)Fx$ ’, which may be read ‘the  $F$ ’. I specify sets with the notation ‘ $\{x:Fx\}$ ’, which has the usual

reading ‘the set of all  $x$  such that  $Fx$ ’. For intensional entities I adopt Quine’s notation in *Word and Object* (1960, 164–65). According to Quine’s notation ‘ $x[Fx]$ ’ signifies the attribute of being  $F$ , and ‘ $[p]$ ’ signifies the proposition that  $p$ . The readings for these notations is in brief as follows.

Table 2 Other notation

Symbol	Reading
$(\text{the } x)Fx$	the $F$
$\{x:Fx\}$	the set of $F$ s
$x[Fx]$	being $F$
$[p]$	that $p$

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